

Grasping the Nettle: Why Pharmacists Must Lead Antibiotic Stewardship Initiatives

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In an editorial in this Journal in 2015,¹ I highlighted the well-recognized public health crisis of increasing antimicrobial resistance. This problem could lead to a future where millions of people die as a result of infections associated with routine, straightforward surgical procedures, such as hip and knee replacements, heart surgery, childbirth, and cancer treatment, to name but a few. Infections such as pneumonia, sexually transmitted diseases, and tuberculosis, which are currently treatable with antibiotics, will be associated with increasing mortality rates, as in the pre-antibiotic era. According to the World Health Organization, antibiotic resistance is one of the biggest threats to global health, food security, and development today.² New data from the Canadian Institute for Health Information³ show that antibiotics are prescribed more frequently in Canada than in other countries within the Organisation for Economic Cooperation and Development. Every day, about 20 out of every 1000 Canadians take a dose of antibiotics, and in Canada antibiotics are prescribed at a rate 133% of that in countries like the Netherlands, Sweden and Germany.

While the causes of antimicrobial resistance are multifactorial and include veterinary use (for food production and companion animals), personal hygiene and antibiotic prescribing for human use in the community and hospital settings are major contributors. Antibiotic stewardship in all health care settings—especially appropriate prescribing and hand-washing regimens—remains the best short-term strategy to tackle the problem. My 2015 editorial highlighted a role for the pharmacist to lead antibiotic stewardship initiatives and called for more research to demonstrate the effectiveness of this role. Sadly, 4 years later, little seems to have changed.

An article in this issue of the *Canadian Journal of Hospital Pharmacy* reports qualitative research from one province in Canada.⁴ The researchers conducted focus groups and interviews with physicians, pharmacists, and nurses to assess their perceptions of antimicrobial use and stewardship in acute hospital settings. The results of this research suggest that practice is improving, but data from other studies do not support this perception. Routine statistics show that the rate of prescribing

of antibiotics in Canada is not changing substantively.⁵ Further, and therefore not surprisingly, rates of antimicrobial resistance are not dropping; instead, they remain well above levels seen at the beginning of the century.⁴

The authors acknowledge that their qualitative research study had limitations with respect to its generalizability.⁴ Nonetheless, given that the 54 participants were recruited from regions across Nova Scotia, that the sites represented by participants included specialized and general regional hospitals, and that data saturation was reached, it is likely that most of the relevant issues were identified and reported. The article suggests that despite the high profile now given to antibiotic resistance, many organizations, including acute care hospitals, are not tackling the issue at a central level, and indeed some of the hospitals from which study participants were recruited did not themselves have organization-wide antibiotic stewardship initiatives. Barriers to improved prescribing included persistent knowledge gaps, failure to implement guidelines, time pressures, and challenges to continuity of care because of staff handovers (i.e., no practitioner wanted to change what another had started). Participants also reported a fear of liability for negligence in not prescribing an antibiotic (should subsequent events reveal that doing so would have been the correct decision) and pressure from patients and other members of the public. However, reassuringly, pharmacists who intervened with a prescriber and suggested amending a prescription in accordance with the guideline found that their interventions were well received.

These findings highlight that pharmacists, as a professional group, have not yet universally embraced an antibiotic stewardship role. Nonetheless, in some countries, progress is being made. In Scotland, specialist antibiotic pharmacists are highly



respected and have been credited⁶ with some of the reductions in antibiotic prescribing we see today. The recently released UK 5-year national action plan to tackle antibiotic resistance highlights the increasing role that clinical pharmacists can play in antimicrobial stewardship in primary care.⁷

Given their status as self-proclaimed medicines experts, it is incumbent on pharmacists to demonstrate this expertise in the context of antibiotic prescribing, by acting as advocates to other health care providers and patients within the hospital and the local community. Systematic reviews have revealed that public knowledge and understanding of antibiotics and antibiotic resistance are still erroneous in many respects,⁸ although evidence suggests that pressure from patients to prescribe is not as real as prescribers may perceive.⁹ Pharmacists, as medicines experts and public health practitioners, can articulate to both patients and professionals the very real population risks that we face if practice does not change. Most prescribing of antibiotics is undertaken in primary care, which potentially creates a reservoir of resistance that can lie dormant until a patient is hospitalized and needs an affective antibiotic for a hospital-acquired infection. We should, as a profession, act across all care setting boundaries and be ambassadors for change. Hospital pharmacists could consider creating networks with their pharmacy colleagues in other settings to optimize antibiotic use, with mutual sharing of antibiotic stewardship initiatives and consistent messages.

Learning and implementing antibiotic stewardship is not a short-term measure. Although the immediate priority is to protect the effectiveness of our current antibiotics, we must think also about future scenarios. Intensive research is yielding promising results in the shape of new drug combinations and new approaches.¹⁰ These treatments will be especially precious and will need our protection too.

So what needs to be done to empower our pharmacy colleagues to take on this leadership role? Applying the COM-B model,¹¹ they need to have the Capability, the Opportunity and the Motivation to effect Behavioural change. In terms of capability, they need to have the confidence to communicate their knowledge and the skills to do so in the most effective way. We know they have the opportunities, and the motivation must surely be there. Once again, we need more research to identify the best way to adopt this leadership role, but in the absence of evidence we cannot go wrong by spreading the message of what we all know to be the case. Antibiotics should be prescribed only for the right reason, at the right dose, for the right indication. All pharmacists should “grasp the nettle” to make this happen.

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