

Canadian list of essential medications

Potential and uncertainties

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A large number of medications are available in Canada and a much larger number of Canadians have difficulty affording them. Provincial formularies list thousands of medications available to individuals receiving social assistance; the Ontario Drug Benefit formulary, for example, contains more than 3800 medications.¹ The size of formularies might contribute to medication costs that are higher than those of comparable countries²⁻⁴ and limit access to medications: at least 2.4 million Canadians report cost-related nonadherence partly because most do not have public or private medication insurance.⁵ Large formularies might also make shortages of certain products more likely.⁶

We summarize experiences with short formularies in other countries and discuss the possible implications of adapting the World Health Organization (WHO) Model List of Essential Medicines to create a short list of essential medications in Canada. Our focus is on the adoption of a short list of essential medications; general issues related to a national formulary that have been discussed elsewhere⁷⁻⁹ are only briefly mentioned. We use the terms *list* and *formulary* interchangeably. Ideally, a short list of essential medications, if shown to be beneficial through rigorous evaluation, would be incorporated in a national medicines strategy. Alternatively, it could be adopted by provinces and territories or by institutions.

Too many therapeutic options and inappropriate prescribing

Suboptimal prescribing by Canadian physicians might be partially related to the large number of available therapeutic agents, as clinicians have trouble learning about thousands of medications.^{10,11} Overall, 37% of older Canadian primary care patients receive at least 1 potentially inappropriate medication.¹² A total of 17% of non-steroidal anti-inflammatory drug (NSAID) prescriptions are for diclofenac¹³ even though it is associated with additional vascular risk compared with other NSAIDs, such as naproxen, and has no advantages over them.¹⁴ Clinicians make better decisions and fewer errors when

they prescribe a short list of familiar medications.^{10,15,16} Benefits from reducing the number of therapeutic options have been realized in various health care settings including nursing homes and hospitals.^{10,15,16} The use of a short list of medications decreased prescriptions for nylidrin, a peripheral vasodilator with limited evidence of efficacy, by 81% in personal care homes in Manitoba¹⁰ and decreased first-choice prescriptions of cefotaxime, a third-generation cephalosporin, by 33% in a hospital in Ireland.¹⁶

Short lists in other countries

Short lists of medications in Sweden and the United Kingdom (UK) and in managed care settings in the United States have harmonized prescribing.^{7,11,17-20} The Swedish evidence-based Wise List of approximately 200 medications has decreased regional variation in prescribing behaviour and achieved 87% adherence to its recommendations among primary health care centres.⁷

There is evidence from controlled and uncontrolled studies in the UK that employing local National Health Service short lists reduces prescribing variation.¹⁸ For example, the influence of a district-level primary care formulary on 50 family physicians from 11 urban and semirural practices in the county of Bedfordshire, England, was assessed in a non-randomized controlled trial.¹⁷ Compared with other family physicians in the county, the proportion of medications appropriately prescribed from the formulary rose by a statistically significant margin in 3 therapeutic categories.¹⁷

In the Veterans Health Administration (VA) in the United States, implementing a national short list of medications drove prescribing toward these medications and was primarily responsible for an 8% lower inappropriate prescribing rate compared with private health maintenance organizations.¹¹

From the WHO list to a Canadian limited formulary

The WHO Model List of Essential Medicines includes drugs that satisfy the health care needs of most of the population²¹ and could be the basis of a Canadian short list of medications. The first WHO list in 1977 contained 205 agents²² and, after being revised every 2 years, the 19th edition contains more than 400 medications.²³ A total of 117 countries have adopted the essential medicines concept from WHO, including high-income countries such as Sweden.²⁴

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Potential effect of a Canadian list

A short list of medications will reduce the number of drugs that trainees and clinicians are required to have a good understanding of. Primary care residents are overwhelmed by the knowledge required to become competent physicians,²⁵ and clinicians face difficulty staying current with medical information.²⁶ Clinicians find it easier to master and prescribe a small subset of all available medications, and those who do so tend to prescribe medications appropriately.^{10,11,15,16,27} Some hospitals already use short lists of essential medications. A short list might also make it easier to develop patient education materials related to medications, although the effects of doing so are not known.

Challenges to adopting a short list

A short list of essential medications will not contain some important treatments. For example, the WHO Model List of Essential Medicines excludes bisphosphonates, cancer treatments, and biologic disease-modifying agents for conditions such as rheumatoid arthritis, psoriasis, and inflammatory bowel disease. Expensive and effective treatments that are needed by a relatively small proportion of the population would be funded through initiatives such as the pan-Canadian Oncology Drug Review.


Patients might be reluctant to switch to medications on the list of essential medications if they are already taking medications that are not on the list. In a survey of 714 health plan members in Houston, Tex, approximately 70% of consumers believed that short medication lists or limited formularies encouraged the prescribing of inferior medications.²⁸ In these cases, grandfathering out medications might help; this approach was used for the VA national formulary.²⁹ After a multiyear marketing campaign in Stockholm, Sweden, most of the public surveyed were positively disposed to asking doctors to prescribe from the Wise List.⁷

A short list of essential medications will exclude many medications in favour of 1 or 2 in a class of drugs (eg, most NSAIDs will not be on the list). Some physicians in Canada believe that even the large existing public formularies run contrary to current evidence or clinical experience. They might find it frustrating when a drug they currently prescribe for which there is evidence of effectiveness (eg, an angiotensin-converting enzyme inhibitor) is not on the short list.³⁰

Establishing a short list of essential medications based on evidence, and ensuring it remains current, will require time and effort. The VA national formulary was established over 2 years. The process of establishing the VA formulary was estimated to have cost \$400 000 in 1995 and 1996, and \$900 000 a year later. However, numerous costs were excluded from these figures,²⁹ including time spent implementing and managing the formulary at local levels, pharmaceutical

negotiation costs, procurement-related costs, and additional local staffing costs, among others.²⁹ The formulary was estimated to have saved \$100 million during the first 2 years.²⁹ We do not know how much establishing and maintaining a short list of medications would cost in Canada or even who would bear the costs. Based on experiences elsewhere, we estimate that establishing and maintaining the short list would cost on the order of millions of dollars and that the savings would be at least 2 orders of magnitude greater.

Need for rigorous evaluation

While the effects of implementing short lists of medications on the process of care have been measured, the effect on health outcomes has not been rigorously evaluated.³¹ Before a short list of essential medications is widely implemented, randomized controlled trials could be conducted in populations where cost-related nonadherence is prevalent. If a short list of essential medications is implemented in Canada, large observational studies should assess the management of certain diseases and the effect on health care use and on clinical outcomes including mortality. The short list of essential medications should be modified based on the results of such evaluation and emerging evidence about new and existing drugs. 

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Competing interests

None declared

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