



Evaluating the impact of reference-based pricing

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Reference-based pricing, introduced in Canada in 1995 under the BC Ministry of Health's Pharmacare Program, limits the reimbursement for a prescribed drug to the cost of the lowest priced product within the same class of drugs deemed to be therapeutically equivalent. In BC the pricing policy has now been applied to 5 drug classes — NSAIDs, histamine-2 receptor antagonists, oral nitrates, angiotensin-converting-enzyme (ACE) inhibitors and dihydropyridine calcium-channel blockers. Patients are automatically exempted if they meet present criteria that imply a potential adverse effect from a switch in medications, and physicians can apply for an exemption for any patient for whom a switch is not advisable.

Given that the costs of drugs within a class can vary substantially, limiting reimbursement to the cost of the lowest priced drug will likely reduce prescription drug expenditures. However, the pricing policy could inadvertently increase overall health care costs. If the referenced drugs are not actually interchangeable in terms of benefit and risk, patients' health may be compromised, and this could increase the use of health care services. There is little evidence, however, to indicate that referenced drugs are not therapeutically equivalent within each of the drug classes. The act of switching medications could also adversely affect patients' health¹ and increase the need for medical services. Patients taking a drug that is no longer fully reimbursed must consult with their physician about treatment options (i.e., switch to a fully reimbursed drug, apply for an exemption or pay out-of-pocket), and if their medication is switched their progress might be monitored. Pharmacists are often needed as well to explain the pricing policy to patients.

Not surprisingly, reference-based pricing has generated considerable debate, especially since the policy was judged to be a promising pharmaceutical cost-control mechanism by the National Forum on Health.² Variants of reference-based pricing have been introduced abroad (e.g., Germany), but there has been little definitive research on the long-term impact of the policy on health care costs^{3,4} and health status.⁵⁻⁸ A study by Chantal Bourgault and colleagues in this issue (page 255)⁹ addresses some of these questions.

Bourgault and colleagues evaluated the equivalence of frequently prescribed ACE inhibitors — captopril, enalapril and lisinopril — by comparing the use of health services in a cohort of Saskatchewan residents after they were initially prescribed these drugs for uncomplicated hy-

pertension. Health service use was adjusted for patient age, sex and socioeconomic status, the year of treatment initiation and the use of health care services in the year before treatment was initiated. Although reference-based pricing was not in effect in BC or Saskatchewan when the study was conducted, at present BC Pharmacare fully reimburses the cost of captopril and partially reimburses the costs of enalapril and lisinopril.

Bourgault and colleagues report that patients initially prescribed captopril visited GPs and specialists more frequently and were at higher risk for hospital admission than those prescribed enalapril or lisinopril. They conclude that captopril was less effective than enalapril or lisinopril. We believe alternative explanations are equally plausible. First, differences in the use of health care services were attributed to the ACE inhibitor initially prescribed, even though some patients subsequently switched to a different drug. Indeed, changes in medications and noncompliance after treatment was initiated were not controlled for. Second, outcome measures such as hospital admissions and death related to cardiac events would be more specific to therapeutic differences between ACE inhibitors than hospital admissions and physician visits for all reasons. Third, if the risk of health services use by hypertensive patients increases over time, the finding that the captopril group used more health services could be related to the fact that the follow-up for those patients was an average of 7 months longer than for those initially prescribed lisinopril. Fourth and most important, the association between the initial ACE inhibitor prescribed and the subsequent use of health care services is consistent with selective prescribing in conventional care, in that a physicians' choice of ACE inhibitor is based on the particular illness and the stage and severity of the illness. This practice, which admits the possibility of channelling bias,^{10,11} is a plausible explanation for the findings of Bourgault and colleagues given that patients initially dispensed captopril were admitted to hospital more often in the year before treatment was initiated than those dispensed enalapril or lisinopril. It is also consistent with evidence-based prescribing practices at the time the study was conducted; because of its short half-life and dosage range, captopril was the ACE inhibitor of choice for the initial treatment of hypertension and for managing less stable hypertension. At the time of the study there was also more information available about captopril than any other ACE in-



hibitor for the treatment of congestive heart failure¹² and the prevention of diabetic nephropathy.^{13,14} Although the patients in this cohort were thought to have uncomplicated hypertension, it would be difficult to exclude all patients with mild congestive heart failure or those at risk for diabetic nephropathy; patients with those complications are likely to use more health care services than those with uncomplicated hypertension.

Bourgault and colleagues recognize the limitations inherent in their study and call for additional research. Direct evaluations of BC's reference-based pricing policy are now under way. Outcomes of patients treated for asthma by physicians who are exempt and by those who are not exempt from reference-based pricing for asthma medications are currently being evaluated. Several groups, including ours, are assessing the use of health care services and the health status of elderly patients in BC whose use of medication was affected by reference-based pricing. The ongoing evaluations will build on the work of Bourgault and colleagues and help to delineate the impact of the pricing policy.

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