cian supply over the past decade. This is simple arithmetic: an enrolment cut in 1992 would not have been felt until 1998 at the earliest, when those taking the shortest route to licensure entered the workforce.

My paper draws attention to other, more significant policies, such as the decision to increase the ratio of specialists to family physicians trained. This change was not made to accommodate more doctors opting for specialty training or because of insufficient funding, as Scully suggests. Rather, it was an attempt to meet the vague objective of ìrestoringî the 50:50 mix of specialists to family physicians, at a time when some provinces had slightly more of the latter.[2] This policy was implemented without public debate, documented evidence of need or projections of its impact. It led to a precipitous drop in the inflow of new doctors over several years and was the single biggest factor behind Canada's declining physician supply.

I agree with Scully, in principle, that the net loss of Canadian physicians abroad over the past decade represents a heavy burden for our nation. I welcome any attempts by policy-makers to encourage physicians to remain in Canada. However, Canada has lived with the brain drain for over 20 years, and its magnitude has not changed appreciably during the past decade. Hence, the brain drain was not a pivotal factor in the drop in our physician supply. Furthermore, our brain drain has historically been buffered by a "brain gain" from other countries. Yet the entry of foreign medical graduates was drastically curtailed in the 1990s, because of decisions by governments and organized medicine.[2]

Ultimately, my report was not intended to point the finger at governments, doctors or the academics who supplied the numbers. No one can be expected to predict the future with complete accuracy. Rather, I have offered some feedback to policy-makers on the impact of their actions, both intended and unintended. It is through feedback that we learn from our inevitable mistakes so that we can do a better job next time. Peltekian is correct in asserting that we need a comprehensive, coordinated framework for health human resource planning. We must monitor trends every year, set plans more frequently, and continually fine-tune our policies on admissions, postgraduate training and foreign graduate intake. We must do a better job of anticipating future demand, identifying more efficient models of care and reducing inappropriate care. Finally, we must start behaving like a nation and engender the kind of cooperation across the provinces that is needed to serve the public.

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Restricted access for PPIs not a panacea

We read with interest the findings of Marshall and associates,[1] who found that interventions to reduce the cost to the British Columbia government of 2 drug classes (reference-based pricing for histamine-2 receptor antagonists and restricted access through special authority for proton pump inhibitors [PPIs]) led to substantial savings in the 12-month period after implementation.

In 1992 the Australian government introduced a similar policy of special authority for PPIs to control drug costs. In contrast to the Canadian system, in which prescriptions issued by gastroenterologists were exempt from the policy, in Australia all cases of esophagitis for which PPIs were prescribed and dispensed had to be endoscopically proven, and hence specialists were not excluded. Despite the restrictions imposed by the policy, Australia experienced a progressive increase in prescriptions for PPIs, and by 1999 PPIs accounted for 34% of antiulcer prescriptions and 51% of government expenditure on antiulcerants.[2] Concurrently, rates of upper gastrointestinal endoscopy in New South Wales rose by 40%.[3] Ultimately, in 2001 the Australian government removed the prescribing restriction on PPIs.

Although the findings of Marshall and associates[1] will be of great interest to administrators in other health case systems struggling with the cost of these drugs, data on other changes in practice, such as referral to gastroenterologists, are needed to more fully assess the overall financial impact of the Canadian strategy.

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[Three of the authors respond:]

We agree that no economic evaluation of drug formulary policy is complete without careful consideration of its effects on resource utilization in other health care sectors. In our article we emphasized the need for more holistic reviews of reference-based pricing and restricted-access policies, with attention to outcomes such as health

status, patient satisfaction and consumption of nonpharmaceutical resources.[1] It is conceivable that patients who must switch drugs because of formulary constraints suffer more relapses, visit their physicians more frequently to review alternatives, undergo more new tests and procedures, and eventually become dissatisfied.

A recent review of health service utilization in British Columbia identified no significant changes associated with the introduction of reference-based pricing for histamine-2 receptor antagonists.[2] However, Westbrook[3] reported significant increases in rates of endoscopy after the introduction of a special authority policy for PPIs in Australia. These discrepant findings suggest that drug reimbursement policies differ in their impact on utilization of nonpharmaceutical resources. Indeed, the Australian policy required endoscopic proof of esophagitis for reimbursement, whereas British Columbia exempted gastroenterologists from prescribing restrictions. Further research is needed to clarify the impact of alternative drug formulary policies and to identify an optimal approach. We commend Westbrook for her efforts in this regard.

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Telephone stroke

During head rotation, neck hyperextension and other provocative manoeuvres of the neck, the vertebral artery may be compressed at various sites along its course.[1] A 63-year-old man with a history of type 2 diabetes, hypertension and ischemic heart disease presented with symptoms of slurred speech, unsteadiness and left-side weakness immediately after a 56-minute telephone conversation. Physical examination revealed left facial droop with mild weakness of the left arm and hand grip of 4/5. Electrocardiography showed sinus rhythm. CT of the head (Fig. 2) showed calcification of the right vertebral artery and a small right pontine infarct. Duplex Doppler ultrasonography showed small atherosclerotic plaques at the distal common carotid arteries. The echocardiogram was normal.

Ischemia and infarction of the brain stem can occur if an abnormal posture of the neck is sustained for more than 10 minutes.[2] These problems have been reported after chiropractic neck manipulation,[3] protracted dental work, intubation, perimetry and x-ray positioning[2] and have been described in "beauty parlour stroke syndrome."[4] Given the temporal relation between the prolonged telephone conversation and the stroke, and exclusion of other causes, this man's right pontine infarct was probably the result of compression of the ipsilateral vertebral artery during the phone call. He had kept his neck bent to the right side throughout the conversation, which caused compression of the already calcified right vertebral artery and resulted in stroke.

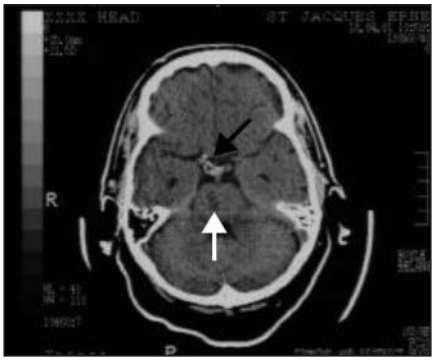

Fig. 2: CT of the head, showing calcification of the right vertebral artery (black arrow) and a right pontine infarct (white arrow).

This case illustrates another situation in which a person may unconsciously keep the neck in an abnormal position that could cause compression or occlusion of the vertebral circulation. Anyone who talks on the telephone for prolonged periods, especially elderly people, should consider changing sides frequently or using a hands-free telephone to avoid sustained provocative neck positions.

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Reserving judgement on HRT

In a recent commentary on hormone replacement therapy (HRT),[1] the authors began by saying that physicians have been prescribing hormones to women as a "wonder pill" without appropriate studies to fully evaluate the risks and benefits. They concluded by saying that the Women's Health Initiative (WHI) study tells us to avoid HRT as far as possible. Are the authors of the commentary not just as guilty of jumping to conclusions?

Granted, the WHI was well designed and well implemented. But what exactly does this study tell us? The WHI researchers have not stopped the arm of the study in which women who have had a hysterectomy are given estrogen only, so we might gather that this large