rate monitoring of the freeze, the adequacy of complete destruction of the lesion, the role of adjuvant intra-arterial chemotherapy, the place of laparoscopic cryosurgery[7] and the improvement of survival in patients with many metastases. Only the future will tell us the exact place of cryosurgery in patients with unresectable malignant tumours of the liver.

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Devolution of hip and knee replacement surgery?

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In this issue of the Journal (pages 373 to 378), Coyte, Young and Williams explore the controversial and somewhat frightening concept of mandated change in practice patterns, based on a combination of statistical analysis of past behaviour by hospitals and physicians and on projections for the future of population demographic characteristics.

Orthopedic surgery, especially elective joint replacement, is an appropriate area for such analysis to begin. The almost unique combination in a rapidly expanding population group (the aging population) of a non-life-threatening illness, with a high degree of disability that can be treated successfully by surgery, and the high resource intensity and cost of the surgical solution (implantable prosthetic devices) has led to scrutiny of the current practice of total joint replacement. While patient demand for a surgical solution to the pain and disability of arthritis is accelerating, provincially funded health care systems are being rigidly controlled through limited public funding.

In recent years, as hospital budgets increasingly came under constraint, cost-accounting systems in most hospitals were inadequate to capture the cost of providing medical care. The only effective cost-accounting measure was to look at invoices received. Thus, high-invoice items became targets for expenditure control. Because of the high cost of implantable devices for the treatment of degenerative joint disease, joint replacements were frequently curtailed in community and teaching hospitals. Because of poor access in community hospitals for patients requiring joint replacement, due to long waiting lists and "implant quotas" for surgeons working in those hospitals, primary physicians began re-

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ferring such patients to teaching hospitals for treatment.

Coyte, Young and Williams, looking at central east Ontario, have demonstrated how this form of cost containment by peripheral hospitals has led to a significant increase in total joint replacement surgery in larger teaching hospitals. Partly because of the increased resources in such hospitals for the provision of more sophisticated patient care, the cost of providing care for primary joint replacement was initially not considered significant, since the amount of nonfinite resource consumed by these patients was generally small.

As the volume of joint replacement surgery in these larger teaching hospitals increased, however, the implant costs became significant, and many felt that the smaller referring hospitals were not meeting their share of the cost burden associated with the surgical treatment of arthritis.

In their paper, Coyte, Young and Williams demonstrate by statistical analysis what it would cost to devolve joint replacement surgery from the larger teaching hospitals back into community hospitals, thus relieving teaching centres of the added financial burden associated with current practice patterns. They show convincingly that with devolution teaching hospitals would improve their budgets with respect to the provision of primary total joint replacement. This presupposes, however, the following measures:

- That a decreased number of total joint replacements performed in teaching hospitals would not have an adverse effect on the training of residents in this common, but often complex, surgical procedure.
- That the money saved by devolution would remain within the teaching hospitals to be spent on other clinical programs.
- That nonteaching hospitals would continue to perform total joint arthroplasty at a lower per-case cost than teaching hospitals, despite the increase in volume and with it the almost inevitable increase in complications and associated increase in length of hospital stay, number of surgical procedures, and so on.

Coyte, Young and Williams make a significant point in regard to referral patterns by primary physicians: that despite provincial support for health service devolution, there has been no major change in the regional distribution of joint replacement surgery.

In my opinion, the most important aspect of this analysis is outlined in the paragraph in which these authors state: "Many barriers limit the extent to which health care services may be devolved. Devolution requires modification to JR [joint replacement] referral patterns, the availability of orthopedic expertise and hospital resources to finance prosthetic devices, increased operating-room time and beds for orthopedic services. Achievement of the potential cost savings of devolution requires both maintenance of current case-cost differences between teaching and nonteaching hospitals, irrespective of the patterns of medical education, and no infusion of additional capital funds to community hospitals for the provision of devolved services."

The authors have not addressed the opposite scenario in which community hospitals, having shed the responsibility for providing appropriate joint-replacement surgical service for patients in their community, would be responsible for providing a part of their current hospital budget to support joint replacement programs in central hospitals that have undertaken this burden without additional compensation from government. It is now relatively simple to track patients who live in one community but obtain medical or surgical services in another. Rather than trying to support surgical services in community hospitals using the impossible proposition that such services would be provided at no additional cost, it would presumably be more reasonable to take budget dollars from those hospitals to support centrally administered joint-replacement programs.

The devolution of surgical care carries with it the imperative of practice guidelines, surveillance of surgical rates and outcome measurements. Although surgeons would likely subscribe to these ideals in the abstract, the practical implementation of the devolution of surgery carries with it the very real risk of decreased resources in one hospital without commensurate increased resources in the other. Physicians should be at the forefront of decision making with respect to the provision of surgical services and should not abandon their patients to the vagaries of funding formulas of health ministries and bottom-line thinking by hospital administrations.

The final statement of Coyte, Young and Williams bears repeating: "Devolving health care services will not be simple." It is the responsibility of physicians to ensure that patient care, teaching and research are given proper consideration in this complex process.