

## Your money and/or your life?

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 Fast-tracked article

The Canadian health care system is in the throes of yet another of its periods of agonized introspection. The debate is already polarized, and the rhetoric heated. In this issue (page 1399),<sup>1</sup> a provocative and important study by P.J. Devereaux and colleagues will further raise the temperature of our national medicare discourse.

The authors have systematically reviewed and pooled the results of 14 US studies that compared short-term mortality outcomes for elderly patients admitted to private, for-profit hospitals with those for elderly patients admitted to private, not-for-profit hospitals. After pooling, the authors concluded that there was a clinically meaningful (relative risk 1.02) and statistically significant ( $p = 0.02$ ) increase in 30–90-day mortality among patients admitted to private, for-profit hospitals

This study should serve ideally as useful grist for the ongoing international debate about the governance and management of health care systems, and it should spark some interesting arguments about the methods used by the authors.

On a pessimistic note, however, this commentator also predicts the following responses. The article will provoke domestic headlines and editorials. Left-leaning proponents of the status quo will call on Mr. Romanow, head of the Commission on the Future of Health Care in Canada, to defend Canadian medicare against privatizing infidels within and without our borders. The Right will claim that the study is utterly inapplicable to Canada and renew their call for Medical Savings Accounts, deductibles, copayments and other articles of faith in the neo-conservative canon. Meanwhile, US newspapers and researchers will take brief notice of this study and then shrug it off.

Such responses are not just a function of ideologies. The study lends itself to competing interpretations. In that spirit, let me put forward the following contradictory propositions and defend them.

1. The study is flawed methodologically, but the study results are correct.
2. The study is seriously limited in its generalizability to Canada, but it contains valuable lessons for our health care debate.

What the authors have done is far from typical in meta-analysis of clinical research data. In meta-analyses of treat-

ment trials, the intervention under study is generally well-defined and consistent across the trials. Here, for-profit ownership of hospitals is the “intervention.” The data are derived from a series of observational studies, not a set of experiments or trials in which randomization helps ensure that confounders are balanced within and across centres. Although each study includes different patient populations, the same hospitals are presumably included multiple times if their for-profit and not-for-profit status is constant. Hence, unmeasured hospital-level and provider characteristics may be repeatedly confounding the results. To their credit, the authors have tried to control for other confounding factors at the institutional level, such as teaching status or multihospital networks. However, these remain broad-brush characterizations.

To deal with the inevitable selection biases that would see sicker patients going to not-for-profit institutions, the authors have focused on the results of studies that adjusted for the expected mortality or comorbidity, or both, of the patient populations. To that end, they used the coefficients from multivariate models published in these articles and deduced the actual proportions of individuals who would have been dead and alive if one could control for other factors. However, the studies differ in the variables used for modelling purposes, the methods of model construction and even whether or not for-profit or not-for-profit status was the variable of principal interest rather than one potential confounder in a model oriented to other ends. Data aggregation has therefore created something of a tossed salad of patients, institutions, variables and outcomes. It is perhaps not surprising that, despite pooling data from 38 000 000 patients, the level of statistical heterogeneity in the findings was as significant as the adverse effect associated with for-profit ownership (both  $p = 0.02$ ).

One potential source of variation in the results is the degree to which “managed care” has expanded in different US medical marketplaces. Among the studies, the analysis by Mukamel and colleagues<sup>2</sup> is notable for its close attention to the role of HMO market penetration and competition as a factor in hospital performance. Conservative colleagues will doubtless highlight the fact that this study alone showed for-profit status to be associated with significant mortality advantages on multivariate analysis. To

that I would say only, not so fast. According to one of the study authors (Dr. Jack Zwanziger, School of Public Health, University of Illinois: personal communication, 2002), the directionality of the for-profit term in their multivariate model may well be a function of the other variables included in their analysis. For example, many of the for-profit hospitals were concentrated in the Pacific region during the period of that study. Hospital mortality was also much higher there. In contrast, there were comparatively few for-profit hospitals in New England and the Mid-Atlantic United States along with much lower short-term mortality. Add "region" to the model (as the authors did), and the for-profit term may be driven toward a nonintuitive weight and direction. Indeed, this study probably accounted for much of the heterogeneity in the results and almost certainly reduced the level of the not-for-profit effect.

This caveat underscores the fact that the authors may, if anything, have weakened their case by generating a pooled estimate of the for-profit effect. Even without aggregation of the data, there are 3 compelling reasons to believe the overall result.

First, the finding of excessive mortality associated with for-profit hospitals recurs in one study after another. It also recurs in most of the studies that were excluded and is evident with multiple modelling techniques.

Second, these studies are not clustered in one time or place. Excess mortality associated with for-profit hospitals is evident in separate comparisons covering most of the United States, over more than a decade in which the US health care system underwent a major transformation in finance and organization.

Third, the authors' secondary findings lend strong plausibility to the overall conclusion. For example, individual study findings are consistent with the literature showing outcome advantages for teaching hospitals.<sup>3</sup> The authors also astutely separated out variables that might be under the control of hospital administrators and found that adjustment for staffing levels diluted the advantage of the not-for-profit hospitals. Other research suggests that, *ceteris paribus*, excessive cuts to the number of skilled bedside nurses lead to an increase in adverse in-hospital outcomes.<sup>4,5</sup>

Let us turn to the second issue: generalizability. A skeptic might argue that the study findings are applicable to Canada only under the following conditions: we eliminate universal health care coverage, retain public insurance only for the poor and the elderly, segment the rest of the market with competing private plans that leave millions uninsured or underinsured, create a large for-profit health care sector, promote managed care models with risk-sharing, place a large percentage of physicians on salary in for-profit and not-for-profit organizations, allow elderly people covered by our mandatory public plan to purchase supplemental insurance on a self-financed basis, jettison some of our social services, re-create US regional variation in hospital care and out-

comes and, not least, assimilate a health care culture that mixes unparalleled technological capacity and intervention with inexplicable neglect!

On a more serious note, the study was obviously not designed to address many of the questions about private sector involvement that go the heart of our national medicare debate. Is it advisable for governments to build public hospitals with private capital, or are we simply mortgaging our future? How much of the development and management of health information services should be contracted out to private industry? How can we reform our patchwork and partially privatized system of pharmaceutical benefits?

Today, Canada is the only industrialized nation that prohibits private insurers from covering any publicly insured health services. Public opinion polls suggest that Canadians have mixed feelings about parallel private insurance. The work of Devereaux and colleagues, however, sheds no direct light on the risks and benefits of allowing for-profit insurers to compete with the public prepayment system. It describes a situation in which private, for-profit hospitals operate as contractors to a public insurance scheme for elderly people. In theory, Canada could choose to adopt the converse position whereby our not-for-profit institutions would draw new revenue streams from private insurance to support their broader social mission.

That said, there are lessons to learn from the timely work of Devereaux and colleagues. Does anyone still want to contract out large segments of our publicly financed health care system to for-profit US hospital chains after reading this article? I hope not. In my view, these findings should also help Canadians re-embrace the core concept of a universal health care system in which the vast majority of services are provided by non-profit institutions with public accountability. Beyond that affirmation, let the medicare debate continue.

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