The Media vs. Private Health Care - The Debate over Quality

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COMPARING clinical outcomes of private versus public health-care delivery has received scant public attention in Canada. Most of the debate (Gray, Rebick, Zelder) has concentrated on public medicine's relative economic performance, cost-containment strategies, and administration. But when a study appeared in the Canadian Medical Association Journal (CMAJ) on May 28, 2002 (Devereaux et al.), purportedly "the first of its kind" (Kennedy) to contrast risk-adjusted mortality rates in private for-profit and private non-profit hospitals across a vast patient population, journalists jumped on the story.

What follows is a retrospective analysis of how the media covered this influential study. That the implications of this study were so badly misunderstood and exaggerated by the media should put Canadian journalists, policy makers, and the general public on guard. As this case study demonstrates, the limitations on a study's significance to a major public policy issue like health-care reform, even if those limitations are admitted in the journal article itself, can be elided or ignored altogether in subsequent media coverage.

Prior to this study, by McMaster University cardiologist Philip Devereaux and 16 colleagues in Hamilton, Buffalo, and Toronto, the topic of quality of care had taken a backseat in the media to debates over financing: user fees, capitation, medical savings accounts, and, especially, the private outsourcing, or "contracting out," of certain services historically delivered by the public sector. These topics, though not entirely separable from quality-of-care issues, have dominated the media coverage of the lead-up to the Romanow Commission's Report on the Future of Health Care in Canada.

To be sure, debates over quality issues and outcome measurements have surfaced before. Critical analysis of waiting lists, for example, has made the case that ever-longer line-ups for key surgical procedures impose deleterious clinical outcomes and disease progression for those waiting in the queue (Walker). Furthermore, in recent years there has been considerable discussion, notably in the Maclean's annual rankings, of health care "report cards" for different surgical procedures across different regions (Hawaleshka).

But by and large, the Canadian media tend to concentrate less on quality issues than on economic ones when it comes to health-system evaluation. This puts Canadian media at odds with American media, which cover health outcomes vigorously. The U.S. media's disproportionate interest arises from private competition among health-care providers, which have a vested interest in communicating their performance rankings to the media.

Even in the United States, however, population-based statistical reports comparing clinical outcomes in different hospitals receive relatively little note in the media. This is because good studies are hard to find; outcomes are difficult to evaluate on such a large

scale. They depend on the nature of the illness under scrutiny and on prior risk factors (including age, heredity, diet, and lifestyle) to which the sick individual has been exposed. It is hard to generalize results. In addition, most health outcomes with respect to quality of life, functioning, and freedom from pain are subjective, intangible, and unpredictable.

Mortality, however, is a readily retrievable, if imperfect, statistic with which to compare the performance of hospitals with different ownership attributes. Such was the approach taken by Devereaux et al. Their conclusions were noteworthy, but severely limited in applicability: U.S. patients in private, for-profit hospitals purportedly had a 2% higher mortality rate than those in private, nonprofit hospitals (RR=1.02).

Studies Examined Were Highly Nuanced

The Devereaux et al. study was a meta-analysis evaluating the combined results of many that had come before it. One such study included in the analysis (Mukamel et al., 2001) had recently looked at risk-adjusted mortality measures developed by the U.S. Health Care Financing Administration in 1,927 hospitals (over 5 million patients). Rates were obtained from all causes and, in addition, from six specific causes (such as hip-replacement surgery) which should normally not have resulted in death. The investigators used a variety of "risk adjusters," such as the percentage of Medicaid (thus poor) patients, the number of days spent in the intensive-care unit, and the number of visits to the Emergency Room. These were proxy risk factors for illness severity and, hence, the probability of a bad outcome. Researchers then compared the observed 30-day post-admission mortality rate to the risk-adjusted predicted rate for various selected procedures. They ultimately found that private, for-profit hospitals had an average mortality rate of 9.05 per 100 patients compared to an average of 9.24 per 100 for private, nonprofit hospitals (p=0.03). Public hospitals had the highest mortality rates (9.4; p=0.12), although this finding was statistically not significant.

Mortality rates showed important regional variations in this study, being lowest in the eastern United States, higher in the central U.S., and highest in the West. Regional differences had a much larger effect (between 20% and 60% of the standard deviation) on death rates than did any other variable -- including hospital ownership, teaching-hospital affiliation, expenditures per patient, bed size, and illness severity. A higher percentage of college graduates in the hospital's zip code area was significantly associated with lower death rates. The more health maintenance organizations (HMOs) there were in the region of the hospital being studied, the lower were the death rates (p=0.02). The same variables were significant for the general death rate as for the six cause-specific death rates that this study examined. The higher the percentage of Medicaid patients, the higher the death rates. The larger the expenditures of the hospitals studied, the lower the death rate. The authors concluded that HMO penetration into a region appeared to have a positive effect on mortality rates but they also noted that the association, as in any cross-sectional study, could be spurious. They speculated that HMOs may simply be attracted to higher-cost markets where more money is spent on health care by more health-conscious consumers.

They also noted that risk-adjusted mortality rates may not be very sensitive measures of quality-of-health-care difference (Mukamel et al., 2001).

The 14 other studies included in the Devereaux meta-analysis were similarly nuanced and questioned the possible effects of a number of different variables on quality of care. One study measured quality in terms not only of survival, but also with respect to changes in a patient's functional and cognitive status, and living arrangements, and found no differences in outcomes by hospital ownership (Sloan et al., 2001). Another study found that risk-adjusted mortality rates were slightly higher in private for-profit hospitals than other types of hospitals, but found the differences to be minimal in small communities (Kuhn et al.). Still another study favoured private nonprofits, but put risk-adjusted mortality rates for private for-profits and public hospitals at roughly the same level (Sloan et al., 1989). The point is that these studies were all over the map in terms of what they assessed and what they found.

Notably, in a commentary in the same edition of the CMAJ as the Devereaux et al. study, David Naylor, dean of Medicine at the University of Toronto, observed that there were so many discrete variables affecting the results in any one of the studies that a meta-analysis of all 15 studies was "flawed methodologically" (Naylor). The disparate data and criteria, Naylor observed, created a "tossed salad of patients, institutions, variables and outcomes." This basic fact, as we shall see, was lost in the media.

General mortality rates lose all meaning when there are so many possible, uncontrolled confounding variables that could affect the results. For instance, some hospitals have palliative care units. Some do not. Some hospitals are in neighbourhoods where substance abuse and violence may lead to higher death rates. Whereas the studies that were combined together for the meta-analysis did apply a risk adjustment (for severity of illness) to their data, it is almost impossible to know what all the significant differences among hospitals may be with respect to death rates. If more for-profit hospitals have well-staffed palliative-care units, as one might expect, it is perfectly reasonable to assume that more patients died in the for-profit hospitals - perhaps they chose to die in hospital rather than at home. It does not mean that more died because they were in for-profit hospitals.

What the Media Did Not Say

Unfortunately, the media failed to grasp these nuances and vastly exaggerated the relevance of the research to Canada. What the Devereaux et al. study did find was that, using a meta-analysis of a selective sample of previously published studies covering the period from 1982 to 1995, there were indications - albeit hardly conclusive - that U.S. (mostly) adult patients in U.S. private nonprofit hospitals die at a slightly higher rate (2%) ($p<0.0001$) than do U.S. patients in U.S. private for-profit hospitals. It was necessary for the authors to limit the time frame since the acuity level in hospitals across North America is rising as the rate of hospitalization (discharge or death in hospital) falls (CIHI); improved technologies and better outpatient care mean that people presenting

themselves in hospital are sicker and older than before. This trend is important; it means that mortality data collected in the 1990s (i.e., seven of the studies included in the meta-analysis) are not comparable with mortality data collected in the 1980s (i.e., the remaining eight studies).

Pooling the results of the 15 observational studies (in 13 separate publications), the researchers tried to adjust for potential confounding variables (e.g. severity of illness) using one of many risk-adjustment models available to biostatisticians. As the authors themselves note, their "systematic review has several limitations" (Devereaux et al.). Very few of these limitations, if any, were identified in media reports. This lack may have influenced public policy for the worse.

Relevance? What Relevance?

"For-profit hospital patients pay for their own demise," was the headline of an opinion article rapidly released by Torstar News Service (Walkom). "Are for-profit hospitals dangerous to your health?" it asks. "The answer, according to (the Devereaux et al. study) is a definite yes," the article states. "For Canadians, their findings are most relevant." Yet it is not clear why these findings are, in fact, pertinent at all to Canada. The studies included in the meta-analysis purportedly controlled for many potential confounders - including teaching-hospital status and the patients' severity of illness - but they failed to adjust for the proportion of Medicaid (the poor), Medicare patients (those over 65), and those covered by a variety of private health-insurance plans. This fact alone makes the findings irrelevant to the Canadian population, which is universally covered by national health insurance from birth to death. In the U.S., the group of elderly who are covered by Medicare includes those who may have had no coverage (and therefore less health care) before turning 65. Such individuals would doubtless present greater health and mortality risks than those protected by health insurance throughout adulthood.

Not oblivious to these methodological concerns, Devereaux et al. mostly included in their meta-analysis those studies that compared death rates of U.S. Medicare (publicly insured, over 65) patients in different institutions; this was done in order to mirror the universally insured Canadian population. But even if the patient populations were anywhere comparable, the hospital-administration structures are not. U.S. private hospitals, whether for-profit or not-for-profit, earn money per patient, while Canadian hospitals get almost all their money from public block funding. Private not-for-profit hospitals in the U.S. are thus managed differently than Canadian hospitals, making comparisons elusive (Graham).

Adding to the confusion is the misleading label, "non-profit." The primary difference between the for-profit and not-for-profit sectors is tax status. Non-profit institutions receive a tax exemption to ensure the provision of care to those who cannot pay. Beyond the tax advantage, U.S. non-profit hospitals have the power to borrow funds through the

bond market and raise revenue through philanthropy. In other words, non-profit does not mean no-profit, as both sectors pursue profitability with equal zeal (Josephson).

The closest Canadian model to the private not-for-profit in the U.S. is that envisaged by Alberta's Bill 11 - the provision of private surgical services within the envelope of block funding to publicly funded institutions like the Calgary Regional Health Authority. Bill 11 bars private, for-profit hospitals. Yet no one commenting in the media suggested the Devereaux et al. study was an endorsement of the Alberta approach. The Edmonton Journal did, however, quote Alberta Health Minister Gary Mar: "To compare [the U.S. and Canadian systems], it's not even apples and oranges. It's more like apples and rutabagas. It's not even in the same category to look at the U.S. system and say that it's somehow applicable here" (Dalal).

The Devereaux et al. study has little or no relevance to Canada, despite the authors' claim that most Canadian hospitals are "private not-for-profit institutions" owing to their private ownership and administration. As has been pointed out elsewhere, Canadian hospitals are only "private not-for-profit" in name. In the 1950s, provincial governments took over their financing and, today, hospitals are capitalized by the state, compelled to employ union workers, overseen by regional authorities, and forcibly merged or closed by provincial governments (Graham). In terms of capitalization, they are essentially public hospitals and, in the studies included in the Devereaux et al. report, risk-adjusted mortality rates in public hospitals were higher than in both private for-profits and private nonprofits.

Accuracy - What 2,200 deaths?

Media coverage of the Devereaux et al. study was considerable. What follows is the Canadian Press (CP) account of the Devereaux et al. study, reported on May 28, 2002: Introducing private, for-profit hospitals into the Canadian health-care system would increase hospital deaths by as many as 2,200 a year, a new study suggests. A consortium of researchers from Canada and the United States jointly analysed 15 American studies comparing death rates in for-profit hospitals to those of not-for-profit institutions. The studies, which included data on 38 million patients in 26,000 hospitals over a time span of 15 years, showed the death rate in for-profit hospitals was two per cent higher than that of not-for-profit institutions (Branswell).

Technically, the study covered a span of 13 years of hospital admissions, not 15. But most problematic in this CP report is the 2,200 figure -- which was nowhere reported in the study itself -- yet which managed to creep into nearly every media account. It stems from an interview Dr. Devereaux gave in a press conference when the study was released. The use of the figure is both alarmist and misleading. Dr. Devereaux has recently explained that "this is in the range of the yearly Canadian deaths from colorectal cancer, motor vehicle accidents or suicide" (Devereaux and Guyatt). The suggestion here is that private nonprofits cause mortality in the same way that cancers and suicides do. Yet his

study only established a correlation between increased mortality and private nonprofits, not causation.

How did he arrive at this number? According to his figures, there are 108,500 hospital deaths in Canada per year. The 2,200 figure (what should actually be 2,170) is 2% of 108,500. But - assuming the 2% higher risk were accurate and assuming the findings were relevant to Canada - the 2,200 figure further assumes that all Canadian hospitals would switch to U.S.-style private, for-profit hospitals. This is totally implausible.

If Canada's hospital-ownership mix were to mirror that of the United States, the number of excess deaths -- again, assuming the two per cent finding were anywhere near valid - would be closer to 400 (Gratzer and Seeman). Even this number is wildly improbable. It assumes that Canadian for-profits would pursue an administration-heavy managed-care model. It also fails to recognize that public and private facilities exist side-by-side. Each institution influences the other's strategies, with public hospitals in the United States caring for a disproportionate number of poor, uninsured and Medicaid recipients.

The dubious 2,200 figure has taken on a life of its own. An editorial in the Niagara Falls Review announces: "The study concludes as many as 2,200 more people would die if private, for-profit hospitals were introduced into the Canadian health care system. Now there's reason to maintain and even improve the system. In fact, 2,200 good reasons" (Niagara Falls Review). The Calgary Herald was more blunt: "For-profit hospitals would kill 2,200 more people yearly, study says" (Heyman). The Globe and Mail, in a sub-headline, inflated the death figures still further: "At least 2,200 more Canadians would die if U.S. system were adopted, study says" (emphasis added) (Picard). Also note that the Globe suggests that the Devereaux et al. study indicts the entire "U.S. system," when it in facts only purports to indict one sliver of it (i.e., private for-profit hospitals).

After the study's release, at least two dozen articles cited the 2,200 figure unquestioningly, saying it had been a conclusive finding of the study. This, despite the fact that two of the authors of the study conceded, in a letter to the editor in the National Post (in response to an article challenging the study's conclusions) that the whole Canadian system would have to switch to for-profit delivery, an unlikely scenario, were the figure to be accurate (Devereaux and Guyatt). The authors thus do not stand by the 2,200 figure.

Nevertheless, the number has quickly assumed the status of "hard evidence." Consider this exchange on the floor of the House of Commons between the leader of the New Democratic Party and the federal Minister of Health:

Ms. Alexa McDonough: ... This is evidence to be sure based on 26,000 American hospitals. Applied to the Canadian context, this means that 2,200 Canadians each year would die unnecessarily. I ask the minister again, will she withdraw her contention that it does not matter who owns and operates the hospitals?

Hon. Anne McLellan: ...[W]hat is important is evidence on which provincial and territorial health care ministers can make decisions around how health care is delivered in this country. In relation to that, the Canadian Medical Association Journal article is in fact an important contribution. It is one which I am sure my provincial and territorial colleagues as well as myself will review very carefully and with great interest.
- Hansard, May 28, 2002

Study weaknesses not reported

Of more than 50 media articles on this study, the vast majority failed to mention any of its potential weaknesses. Here are just some points worth considering:

(i) The study was fast-tracked through to publication, rather than through the normal length of peer review (2-6 months); this suggests partiality on the part of the journal's editors, who have admitted that they wished to ensure the study's release would influence the Romanow report.

(ii) The meta-analysis did not sufficiently control for regional disparities or HMO penetration, which have been shown to be significant determinants of hospital mortality (Mukamel et al., 2001).

(iii) Large administrative databases of the kind used in this study have a limited ability to adjust for disease severity.

(iv) Other explanatory variables were not canvassed, including whether physicians were hospital employees or independent contractors, and their relationship with HMOs (Devereaux et al.).

(v) The studies cited "have done little to adjust for the proportion of Medicare patients versus privately insured patients in the institutions being analyzed" (Devereaux et al.). This is critically important since we don't know to what extent patients' prior health coverage may have played a role in the results.

(vi) Many of the studies included in the meta-analysis didn't have directly comparable data sets -- i.e., different sizes, dates for data collection, geographic regions, academic affiliations, and different patient populations.

(vii) It wasn't clear what was meant by the labels "private non-profit" and "private for-profit" in these studies. Given their similar legal charters, medically insured populations and contractual relationships with HMOs, U.S. for-profits and non-profits sometimes can be indistinguishable in terms of how they strive for efficiencies and contain costs (Josephson).

(viii) The study did not examine small surgical centres, what health-care managers call "focused factories." Instead, the researchers restricted their analysis

to large, traditional hospital settings. This is important, since we know from very recent research that patients are more likely to survive a stroke caused by a burst blood vessel if they are admitted to a specialized facility that treats these strokes more often (Bardach et al.).

(ix) The study did not compare many other indices of quality, including wait lists and patient-satisfaction and doctor surveys.

(x) It told us nothing about the superiority of a public system versus a mixed private-public system.

(xi) The report warns "it is the very same large U.S. hospital chains" examined in the study that would be purchasing such hospitals in Canada were they to be allowed under Canada Health Act reforms. This is speculative.

(xii) Without any supporting data, the report attributes lower mortality rates in for-profit facilities to the need for administrators to line the pockets of investors, thus reducing expenditures on patient care.

Media Mistook Correlation for Cause

According to one journalist interpreting the Devereaux et al. study, "...people treated in for-profit hospitals are more liable to die" (Walkom). That is not an accurate representation of the study findings, which were all cross-sectional and correlational (meaning that one thing cannot be said to cause another), where the correlations were small, and the error bars for each study comparatively large. The issue of region (the variable identified by a wide margin as the most important in Mukamel et al., 2001) was not even addressed.

"The Canadian study finds that for-profit hospitals employ fewer skilled nurses and doctors per patient. The result is that more of their patients die ... For-profit hospitals compete by skimping on care or -- to put it most unkindly -- by killing their patients. The evidence seems to back them up" (Walkom). This is inflammatory and conflates correlation with cause. Cost-cutting affects all hospitals, whatever their ownership status. Nor does cost-cutting necessarily lead to higher mortality rates. A study published last year found that hospital closures and health-care restructuring were correlated with better survival rates for cardiac patients, shorter hospital stays, and fewer complications (Hemmelgarn et al.).

The Whitehorse Star reports on the Devereaux et al. study with the headline: "Death rates would rise if Canada allowed for-profit hospitals" (Whitehorse Star). Yet this is not at all what the study said. The newspaper article, drawing on the CP report, leads off: "Introducing private, for-profit hospitals into the Canadian health-care system would increase hospital deaths by as many as 2,200 a year, a new study suggests." Again, the 2200 figure was not in the peer-reviewed article but was something the lead author, Dr.

Devereaux, had said in a press conference. The article goes on to state: "The .. researchers set out to find out if there were any health consequences of delivering hospital care in a for-profit setting" (emphasis added). If, however, that is what these authors set out to do, they did not do it. For they only looked for studies comparing mortality rates in for-profit versus nonprofit hospitals and conducted a meta-analysis (a compilation) of these studies and found correlations, not consequences.

Much of the hyperbole in the media accounts was nourished by exaggeration of the study's results by the authors themselves. In an interview on Canada AM, Dr. Devereaux stated: "The study basically demonstrates, including data on 38 million patients in 26,000 hospitals, that there is an increased chance of dying in a for profit hospital" (Canada AM). Yet the doctor misrepresents his own findings. A correlation between mortality rate and hospital does not mean that an individual's chances of dying are necessarily higher in that hospital. For instance, in a very recent survey by Consumer Checkbook, a nonprofit consumer information service, the Dana-Farber Cancer Institute in Boston, among the top cancer hospitals in the world, had the Boston area's highest death rate (21%) (Consumer's Checkbook). That is presumably because Dana Farber treats mostly patients with advanced cancers, often deadly and incurable.

Even though the Consumer's Checkbook, like the Devereaux et al. study, tried as best it could to adjust for risk, a crude risk-modeling tool applied to millions of patients across the United States will inevitably fail to control for many complex illnesses, surgeries and related risks of the kind seen at Dana Farber. In their attempts to adjust for acuity, the studies included in the Devereaux et al. meta-analysis might have been more precise in their risk adjustments had they examined patient charts, which would have yielded a fair amount of individualized information about the patient and the illness; instead they looked at billing codes (which indicate diagnosis and type of intervention).

Methodological Limitations

It is very difficult for time-pressured journalists to highlight questionable assertions in scientific studies, many of which are mentioned above. But good journalism requires an appreciation of nuance. Of the 14 studies considering adult care in the meta-analysis, seven found no statistical difference in mortality between private for-profit and private non-profit hospitals (this included the largest study covering 7.4 million patients); one showed a lower death rate at the for-profit institution (this was the second-largest study and included data from 5.3 million patients). In other words, a majority of the studies -- including the two largest -- had findings that didn't support Dr. Devereaux's conclusions.

Although many media noted the sample size was large, they usually did not pick up on the lack of generalizability from the populations studied. Except for a handful of articles, most did not cite anyone critical of the study's design. None of the articles mentioned that this was not a prospective longitudinal study following patients into and out of hospitals (rather, it was cross-sectional - a snapshot study). The fact that 2% is a small effect size -- less than the standard error of most of the studies -- went unnoticed.

None of the reports questioned the "explanation" for the higher costs of for-profit hospitals (that 10-15% of profits were given to administrators). This was speculation rather than fact. The study authors state: "investors expect a 10%-15% return on their investment," which, in turn could lead to skimming on patient care. None of this makes sense of the fact that for-profit hospitals have a vested interest in keeping their mortality figures low and their other quality indices high, since these figures are routinely reported in publications like Consumers Checkbook and U.S. News & World Report's "Best Hospital" rankings.

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