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REVIEW

Prelude to a systematic review of activity-based funding of hospitals: potential effects on cost, quality, access, efficiency, and equity

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ABSTRACT

Until recently, hospital funding in Canada has been based predominantly on global budgets, but health care system decision-makers throughout the country are now seriously considering an alternative funding model referred to as activity-based funding (ABF). Under this system, hospital services are classified prospectively into clinically meaningful “bundles” of care that use similar levels of resources. Opinion is divided as to whether ABF would help the Canadian health care system to achieve any of the putative benefits originally achieved by ABF in other countries, or whether the risks would outweigh the benefits. As yet, there has been no systematic review of the evidence. In March 2012 our research team launched a systematic review to inform Canadian policy-makers about how this funding model affects health care systems around the world. Of the more than 16 000 potentially eligible titles and abstracts screened, 261 studies, representing 64 countries (either singly or in aggregate), provide data on at least one of the cost, quality, access, efficiency, and equity outcomes of interest to our research team. We are now in the process of analyzing data from the eligible studies most germane to the Canadian context. This commentary is intended to alert decision-makers to the upcoming release of a series of papers based on our systematic review of ABF, in the hope that our synthesis will soon provide a more robust evidence base to better inform decision-makers.

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The Canadian approach to funding hospitals may be on the verge of a monumental change. Until recently, hospital funding has been based predominantly on global budgets, but health care system decision-makers throughout the country are now seriously considering—and some are already adopting—an alternative funding model referred to as activity-based funding (ABF).

In contrast with global budgeting, ABF pays hospitals per episode of care for each patient served. In simple terms, the money follows the patient. Under this system, hospital services are classified prospectively into clinically meaningful "bundles" of care that use similar levels of resources. These bundles take into account patient characteristics such as diagnosis and complexity, along with anticipated volume and intensity of care. Different jurisdictions use various terms to describe these bundles of services; for example, they might be called "diagnosis-related groups" in the United States and "health-resource groups" or "case-mix groups" in Canada.[1] Various costing methods are used to set a "price" for the bundle of services provided to each patient during a hospital stay.

The historical roots of ABF lie in the US health care system. In the late 1970s, rising health care costs in the United States coupled with economic stagnation forced policy-makers to investigate financing reforms for Medicare (the publicly funded program for patients aged 65 and older). Starting in 1983, the government implemented a prospective system of hospital payment based on DRGs; rather than simply paying hospitals whatever they charged to treat Medicare patients, the new model paid hospitals a predetermined, set rate based on the patient's diagnosis.[2] Since then, other countries have adopted, and adapted, this approach as the basis for all or part of their hospital funding systems.

In Canada, where reductions in government revenues are spurring a desire to "bend the cost curve" in health care, ministries of health are "focusing more on efficiency, value for money, and accountability"[3] while they simultaneously look for ways to increase access to hospital care and maintain quality of care.[4] ABF has captured the imagination of some policy-makers and advocates as one potential component of hospital reform.

Opinion is divided within the Canadian health care policy community as to whether ABF would help us achieve any of

the putative benefits originally achieved in the United States and in other nations that subsequently adopted variations on the ABF theme, or whether the risks would outweigh the benefits.

What are those alleged benefits? Enthusiasts point to evidence that ABF can reduce costs per episode of care or improve efficiency,[4,5] reduce length of stay,[6] and reduce wait times;[7] they also claim that a culture change, by which patients are seen not as cost centres but as as revenue generators,[4] is needed in Canadian health care. To elaborate, by fostering competition for patients between hospitals, ABF theoretically provides hospitals with financial incentives to increase efficiency. Under ABF, hospitals retain any surplus in funding above their expenditures per case, but must absorb any losses if expenditures exceed reimbursement. The other potential benefits arising from these financial incentives include stimulating productivity[8] (i.e., increasing patient throughput, leading to improved access and reduced wait times), increasing transparency[9] and accountability in hospital spending, and moderating cost growth.[10]

But what about the potential adverse consequences of introducing ABF? The detractors of this funding method point to evidence that it leads to the rapid discharge of sick patients into community settings that may be unprepared to care for them,[11] provides an incentive to "up-code" and thus "game" the system,[12] creates a perverse focus on "profitable" over "unprofitable" patients and procedures, with negative implications for equitable access to care,[13] and increases overall costs to the health care system[14,15] in the absence of global caps on spending.[4]

Under ABF, the incentive to spend less, on average, per patient could encourage the premature discharge of sick patients from hospital, which might increase rates of preventable readmissions[16] and of postdischarge mortality. Spending less per patient might also compromise the quality of care patients receive in hospital or lead hospitals to eliminate unprofitable services (such as trauma units[17,18]) or, conversely, in order to "make a profit," to unnecessarily admit and potentially overtreat patients who could otherwise be cared for as outpatients.[4,19] There is also a concern that a "cherry-picking" or "cream-skimming" effect could reduce equitable access to care if hospitals cater preferentially to profitable patients.[20] Similarly, since more treatment-intensive case-mix groups warrant a higher reimbursement rate, there is an incentive to selectively code patients as being sicker than they really are.[21,22] Any efficiencies gained through ABF may be undermined by the increased administrative spending required to cope with coding and monitoring demands, as well as by the transaction costs of implementing ABF. Another worry is that by breaking care into "saleable units"[23] ABF will facilitate the introduction of private, profit-driven delivery of care.

Both ABF enthusiasts and detractors can point to evidence to support their claims, and each line of reasoning follows a logical narrative that can be persuasive to policy-makers. However, in making their case, each group selects the international experiences that are consistent with their narrative, rather than attempting to understand the evidence as a whole.

British Columbia and Ontario are leading the Canadian movement toward ABF as an alternative to, or in combination with, global budgets. Results from a British Columbia study published early in 2013 indicated that one anticipated benefit, increasing patient through-put, had not been achieved: the researchers found "no intervention effect of the ABF reform on the changes in surgical volumes over time in all five health authorities."[24] Such findings raise questions about whether the supposed benefits of ABF play out when this model is implemented in the real world.

The international literature on ABF consists of research studies and non-systematic reviews[8,9,25,26,27,28] without, so far, a single systematic review. Health care researchers are convinced that "systematic reviews of research evidence constitute a more appropriate source of research evidence for decision-making than the latest or most heavily publicized research study."[29] Policy- and decision-makers should rely on robust evidence to make well-informed decisions about how best to finance and deliver health care. "Evidence-informed" policy-making is characterized by the "systematic and transparent access to, and appraisal of, evidence as an input into the policy-making process."[30]

Yet, in the absence of a thorough and systematic approach to understanding the impact of ABF on cost, quality, access, efficiency, and equity across multiple health care systems and at different times, Canadian policy-makers continue to make decisions based upon only selected evidence. The limited reviews available may well reflect biased selections of the available evidence.

Having established the pressing need to review all the evidence available about ABF, in March 2012 our research team launched a systematic review to inform Canadian policy-makers about how this funding model affects health care systems around the world. Our systematic search of Canadian and international evidence has demonstrated that there is no shortage of published literature addressing ABF. Of the more than 16 000 potentially eligible titles and abstracts we have screened, 261 studies, representing 64 countries (either singly or in aggregate), provide data on at least one of the cost, quality, access, efficiency, and equity outcomes of interest to our research team. We are now in the process of analyzing data from the eligible studies most germane to the Canadian context.

This commentary is intended to alert decision-makers to the upcoming release of a series of papers based on our systematic review of ABF, in the hope that there will be an appetite for this knowledge at a time when they are being asked to make decisions in its absence.

It would be a shame if Canadian governments moved to ABF only to find later that, for instance, they obtain none of the putative benefits but instead observe premature hospital discharges to an unprepared post-hospital care system and subsequent adverse health consequences to patients. It will be particularly regrettable if, armed with a systematic review of the evidence, they could have foreseen such an unfortunate outcome of their policy experiment. It would be similarly unfortunate for governments to abandon ABF only to learn that the benefits do in fact outweigh the harms. We simply don't know yet which way the evidence will lean.

Our systematic review will soon provide a more robust evidence base to better inform decision-makers. Until then, it would be imprudent to rush to judgment about the effects ABF may, or may not, have on Canada's health care system. We look forward to releasing our results in the near future and encourage governments to consider the implications of our review in their decisions about hospital funding reforms.

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