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What is This?
The Multiple Causal Pathways Between Performance Measures’ Use and Effects

Damien Contandriopoulos¹, François Champagne¹, and Jean-Louis Denis²

Abstract
In recent decades, there has been a growing interest in the design and implementation of systems using public reporting of performance measures to improve performance. In their simplest form, such interventions rest on the market-based logic of consumers using publicly released information to modify their behavior, thereby penalizing poor performers. However, evidence from large-scale efforts to use public reporting of performance measures as an instrumental performance improvement tool suggests that the causal mechanisms involved are much more complex. This article offers a typology of four different plausible causal pathways linking public reporting of performance measures and performance improvement. This typology rests on a variety of conceptual models and a review of available empirical evidence. We then use this typology to discuss the core elements that need to be taken into account in efforts to use public reporting of performance measures as a performance improvement tool.

Keywords
performance reports, hospital performance, public use of performance reports, conceptual model

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Introduction

In recent decades, there has been a growing interest in the design and implementation of systems for public reporting of performance measures (PRPM) in the health care sector. Those systems are founded on two complementary logics (Marshall, Shekelle, Davies, & Smith, 2003). The first is anchored in the democratic ideal of citizens’ involvement in public affairs (Nilsen, Myrhaug, Johansen, Oliver, & Oxman, 2008). According to this view, public sector organizations should be open to public scrutiny of their activity, and making performance measures public contributes to this ideal. The second logic, much more instrumental in nature, is predicated on the hypothesis that PRPM can be used as a lever to promote quality improvement interventions and ultimately to increase performance. The present article is focused on the second logic of releasing performance measures as a lever to improve performance. This focus should in no way be interpreted as discounting the importance of organizational transparency and accountability in democratic society. Besides, as we will show, there is some interconnection between the two levels as, ultimately, social values play a central role in structuring the way instrumental interventions influence practices.

In their simplest form, instrumental interventions follow the market-based logic of competition based on consumers’ awareness of performance: Consumers use publicly released information to modify their behavior and vote with their feet, thereby penalizing poor performers and rewarding high-performing service delivery structures. However, evidence from large-scale efforts to use PRPM as a performance improvement tool suggests the causal mechanisms involved are much more complex. First, the necessary conditions for such a market-like logic are stringent and generally not fulfilled in the health care sector. Second, even if market-like use of publicly released performance data is much less promising in practice than in theory, other causal pathways between the PRPM and performance improvement exist and are worth exploring. This is also one of the core conclusions of a recent RAND Europe report on the subject:

Growing evidence suggests that other user groups, such as managers and providers, indeed use comparative information to improve care where public reporting occurred. It is important to note that information systems can encourage changes in provider behaviour even if the public makes limited use of them. This supports the notion of an association between public reporting and quality improvement, which operates largely through provider behaviour change. More systematic research is needed, however, to understand the underlying mechanisms. (Cacace, Ettelt, Brereton, Pedersen, & Nolte, 2011, p. xv)

The present article is specifically focused on furthering our understanding of the underlying mechanisms linking PRPM with actual performance improvement. We begin with a discussion of core concepts, and from these we propose a typology of four different plausible causal pathways linking PRPM with performance improvement. This typology is based on a variety of conceptual models and a review of available empirical evidence. We then use this typology to discuss the core elements that need to be taken into account when designing efforts to use PRPM as a performance improvement tool.
New Contribution

Available evidence shows that PRPM has a different and more substantial effect than does selective disclosure of the same information. However, the causal mechanisms that explain this observation are poorly understood. We conducted an analytical review of the published evidence on the subject to build a typology of four causal pathways that can trace the link between PRPM and improvement of actual performance. These pathways are each anchored in distinct economic and organizational theories that are used to further discuss their plausibility and their conditions of efficacy.

The causal pathway that is the most studied and on which most public reporting interventions are founded is anchored in the principle of market-like selection of high-performing organizations. However, available evidence suggests that this is not the most effective or promising avenue. The framework presented here distinguishes three other potential causal pathways whose effects arise from the improvement of the average performance of most organizations rather than from selection. Those pathways are anchored in various forms of stakeholder mobilization prompted by making performance measures public. The evidence suggests that some of those change pathways are promising as instrumental avenues to improve the performance of health care organizations.

The typology proposed here can help identify the core elements that need to be taken into account when designing interventions to use PRPM as a performance improvement tool and can also provide a framework to understand the role such interventions can play in broader performance improvement efforts.

Defining the Public Reporting of Performance Measures

We adopt here an instrumental view of performance measures use, in which performance measurement is seen as a means for stimulating performance improvement. Our first premise is that measuring something is, in itself, neither necessary nor sufficient to intervene in it (Berwick, James, & Coye, 2003; Ginsburg, 2003). Any given measurement will have an impact only to the extent that it is used by someone to modify his, or others’, behavior. This assumption implies that discussing the use of performance measures requires defining the users of these measures, who must have a credible mechanism through which they can access this information, the capabilities to use it, and the motivation to do so.

Performance measures can be used at several levels (Cacace et al., 2011). At the macro level, they could be used to support investment decisions, while at the very micro level, they might help frontline workers to improve the service they offer. In this article, we conceive of health care service production as depending on interactions among three groups of actors: patients and families, professionals delivering care, and managerial and supervisory bodies (Marshall, Shekelle, Leatherman, & Brook, 2000). This last is the most diverse, encompassing many groups such as hospital management, third-party payers, insurers, regulatory bodies, governments, and so on. Each group can, at least in theory, influence organizational performance through one or more causal pathways, as we discuss in the next section.
We also distinguish between two main mechanisms through which potential users can access performance measures. In the first, which we call PRPM, significant efforts are invested in making those measures readily available to anyone interested. This implies that anyone aware of the existence of these data can access them easily without needing special privileges or incurring significant formalities, fees, or delays. However, this does not mean that all or even the majority of potential users are aware of their existence. The second mechanism refers to the selective disclosing of performance measures to targeted groups of users. This implies that the measure is made available on a need-to-know basis and remains out of the public domain. Many possible operationalizations of these two mechanisms are possible, and the boundaries between them are sometimes blurred. It is also possible to draw further distinctions; for example, Morris and Zelmer (2005) distinguish between publishing measures for public use (reporting for the public) and putting in the public domain reports aimed at clinicians or managers (reporting made public).

As mentioned, the fact that data are publicly available does not mean that everyone is aware of their existence. Awareness of the content of released performance measures is, obviously, a necessary precondition for any type of use. However, studies have repeatedly highlighted that a significant proportion of potential users are either unaware of the existence of data or unable to access them (Cacace et al., 2011; Ginsburg, 2003; Hafner et al., 2011; Longo et al., 1997; Morris & Zelmer, 2005; Romano, Rainwater, & Antonius, 1999). Many authors are calling for more efforts to make data available and implement more effective and consistent data diffusion strategies. However, in practice, important challenges remain (Cacace et al., 2011; Christianson, Volmar, Alexander, & Scanlon, 2010; Faber, Bosch, Wollersheim, Leatherman, & Grol, 2009; Hamblin, 2008a).

Patients, their families, and prospective patients (i.e., all of us) are the primary targets of most PRPM interventions. But, as stated in the Introduction, even if a given PRPM intervention is intended for patients, once the measure is publicly available there is no reason why it could not have an impact on actors in other groups (Fung, Lim, Mattke, Damberg, & Shekelle, 2008). In fact, there is converging evidence that both professionals and supervisory bodies react to the PRPM (Fung et al., 2008; Hafner et al., 2011; Hibbard, 2003, 2008; Hibbard, Stockard, & Tusler, 2005; Marshall et al., 2000; Marshall et al., 2003; Nilsen et al., 2008; Tu & Cameron, 2003; Tu et al., 2009).

Finally, it is not the goal of this article to discuss the many challenges involved in developing valid and usable performance measures; this question is discussed extensively in the international literature (Bevan & Hood, 2006; Brien & Ghali, 2008; Deccache & van Ballekom, 2010; Delnoij, Rademakers, & Groenewegen, 2010; Geraedts, Schwartz, & Molzahn, 2007; Ginsburg, 2003; Hibbard, Greene, & Daniel, 2010; Hibbard, Slovic, Peters, & Finucane, 2002; Klazinga, Fischer, & ten Asbroek, 2011; Marshall et al., 2003; Robinowitz & Dudley, 2006; Vrangbæk, Østergren, Birk, & Winblad, 2007). Rather, we want to raise the issue of the ultimate purpose of the instrumental use of PRPM. If the objective is to be above average, then half of organizations will fail to achieve it. If, on the other hand, the objective is to continuously
produce higher levels of average performance, then what is important may not be the measured performance in itself but rather the effectiveness and intensity of performance improvements (Carter, Klein, & Day, 1992). As we discuss in the next section, a core characteristic of PRPM is its potential stimulus effect, which is likely to be only partly affected by the validity of the measure used.

The Multiple Causal Pathways Between Performance Measures’ Use and Effects

In 2003, Berwick, James, and Coye proposed an often-cited conceptual framework to understand the causal relation between performance measurement and performance improvement. This framework defines two complementary causal pathways. The first, labeled “selection,” is predicated on clients (patients, referring physicians, insurers, or public agencies) modifying their choice of providers, resource allocation, or other decisions on the basis of available performance measures (Werner & Asch, 2005). For example, a third-party payer may use either PRPM or selectively disclosed information to modulate its reimbursement policy to modify either patients’ or providers’ behaviors. The selection pathway rests on the Darwinian postulate that average performance in the provider population will increase as underperformers are weeded out. As we will see, the necessary conditions for such a mechanism to produce expected results are quite stringent.

The second causal pathway, labeled “change,” is based on the impact of providers’ efforts to use performance measures to improve their performance. The change pathway rests on the Lamarckian postulate that average performance in the provider population will increase through improvements in the performance of many providers within this population. Again, this mechanism depends on many necessary conditions, which we will discuss later, but it is interesting to note that they are quite different from those necessary for selection.

Although Berwick et al.’s (2003) framework distinguishes between two pathways, other authors, following the work of Hibbard and colleagues (Hibbard, 2008; Hibbard et al., 2005) have described a third, the “reputation” pathway (Cacace et al., 2011; Hamblin, 2008a, 2008b). This pathway describes the impact of performance improvement interventions prompted by stakeholders’ concerns about their organization’s public image following PRPM. However, the available evidence (Hibbard, 2008; Hibbard et al., 2005) suggests that the causal link between PRPM and performance improvement in the reputation pathway is much the same as in the change pathway. In both cases, improvement comes from stakeholders’ deliberate efforts to implement performance improvement initiatives rather than from market forces shifting market shares and driving low performers out of business. As we discuss at length later on, while we believe PRPM’s influence on a provider’s reputation is of tremendous practical importance, we consider the reputation pathway logically not to be a third pathway to be added to the two of Berwick et al. (2003) but rather a specific form that the change pathway can assume.
Another issue with the “selection” or “change” typology is that it relies somewhat heavily on an implicit definition of organizational boundaries. From a systemic perspective (either that of a vertically integrated health system or of a third-party payer in a public system), the reallocation of resources toward high performers and the eventual closure of underperforming units would probably be construed as change, while, from the perspective of individual units, it amounts to selection. The same argument could be made for intra-organizational reallocations between services, for example. This may explain why, in many later interpretations of Berwick et al.’s (2003) typology (Faber et al., 2009; Fung et al., 2008; Hibbard, 2003), selection was restricted to the natural-selection effects of clients’ modifying their choice of providers.

In the next sections we discuss these two causal pathways in detail and propose that the second, the change hypothesis, is best broken down into a number of distinct causal pathways.

Selection

Selection is the causal pathway between PRPM and performance improvement that appears most often in the literature. Many factors explain this popularity, such as its simplicity, its fit with the micro-economic model of a competitive market, as well as experiences from other fields, such as the many iterations of online customer experience–rating websites. Because of this popularity, this causal pathway has been, by far, the rationale most often invoked in designing and analyzing PRPM interventions (Christianson et al., 2010; Faber et al., 2009; Fung et al., 2008; Hibbard et al., 2002; Hibbard et al., 2005; Kang, Kim, Cho, & Lee, 2009; McCormack et al., 2001; Scanlon, Chernew, McLaughlin, & Solon, 2002).

However, in practice, selection has repeatedly been shown to have little or no effect on the providers’ average performance (Edgman-Levitan & Cleary, 1996; Fung et al., 2008; Hibbard, 2008; Marshall et al., 2000; Marshall et al., 2003; Schauffler & Mordavsky, 2001). Analysis of the impact of publicly releasing CABG mortality data in New York State suggested that there was an effect, but no consensus existed on whether that effect was attributable to patient selection or quality improvement (Marshall et al., 2000). Some studies have found effects on intermediate outcomes—such as a declared intent to use the data (Jung, Feldman, & Scanlon, 2011; Kang et al., 2009), increased intent to change provider among Medicare patients receiving information on provider costs and benefits (McCormack et al., 2001), or a diminished intent to choose plans with high out-of-pocket contributions (Scanlon et al., 2002)—but convincing evidence showing a significant effect on the end outcome is scarce.

The divergence between the conceptual and logical elegance of the selection pathway and its lack of obvious effects is generally attributed to the stringent conditions necessary for it to work as intended. Those conditions include the following: (a) the measure of performance should accurately reflect what it intends to measure, and its intended users should be confident this is the case; (b) information should be available and understandable by its intended users, implying a good fit between users’ skills and information formatting; (c) users should be willing and motivated to modify their
behavior according to the performance measures available, which includes taking this information into account even if other elements such as prices, accessibility, habits, and so on, are likely to play a role in decisions; (d) there should be multiple providers and users with the capacity to influence the choice of providers; and (e) at the population level, eventually those organizations selected out will lose market share and die off (Berwick et al., 2003; Faber et al., 2009; Hibbard, 2003; Moser, Korstjens, van der Weijden, & Tange, 2010; Nilsen et al., 2008). Available evidence suggests that none of these necessary steps should be taken for granted in the health sector (Davies, Washington, & Bindman, 2002; Faber et al., 2009; Hibbard, Peters, Dixon, & Tusler, 2007; Robinowitz & Dudley, 2006).

Despite calls to develop better indicators, increase patients’ competences, or implement stronger incentives supporting selection, it remains doubtful that much can be expected from this avenue. Reviews of available evidence on PRPM effects suggest that the change pathway appears more promising than the selection pathway (Cacace et al., 2011; Fung et al., 2008; Schaufler & Mordavsky, 2001). However, in contrast to the selection pathway, the theories supporting the change pathway are seldom made explicit and discussed. Moreover, as we argue in the next sections, there is probably not just one single change pathway but, rather, many quite different causal mechanisms at work, each with distinct conceptual bases.

**Change**

There is convincing evidence that PRPM triggers effects (such as organizational efforts to improve performance) that private disclosure of the same data to organizational management fails to produce (Hafner et al., 2011; Hibbard, 2003; Hibbard et al., 2005; Tu et al., 2009). This supports the hypothesis that publicly releasing information has a stimulus effect over and above its managerial informative value. In the study that pioneered the idea of a reputation pathway, Hibbard et al. (2005) showed that communicating a private report on hospital performance modestly improved average hospital performance, as compared with no report. Those modest improvements could be adequately explained by a top-down rational conception of management. In such a view, the report likely raised managers’ awareness about areas for improvement, which triggered intervention. However, hospitals whose performance was made public exhibited much larger performance improvement without any measurable impact on their market shares. This is something both the selection pathway and the rational managerial models fail to adequately explain and that Hibbard et al. (2005) attributed to a stimulus effect of hospitals’ concern for their reputations, or what the British aptly call the “name and shame game” (Bevan & Hood, 2006).

In the next section, we develop three different pathways through which PRPM can trigger change leading to improved performance, and we discuss the links between those pathways and their underlying theories. Table 1 summarizes the main characteristics of the four pathways described in the article.
Table 1. Four Causal Pathways Between Performance Measurement and Performance Improvement.

<table>
<thead>
<tr>
<th>Typology of causal pathways between performance measurement and performance improvement</th>
<th>Selection</th>
<th>Change through managerial interventions</th>
<th>Change through social structuring</th>
<th>Change through internal pressures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causal explanation to support an increase in average performance in provider population</td>
<td>Market-like natural selection (Darwinian)</td>
<td>Environmental adaptation (Lamarckian)</td>
<td>Environmental adaptation (Lamarckian)</td>
<td>Environmental adaptation (Lamarckian)</td>
</tr>
<tr>
<td>Examples of theories providing a conceptual basis to support the pathway</td>
<td>Micro-economic theory of competitive markets</td>
<td>Single-loop learning</td>
<td>External control of organizations</td>
<td>Behavioral theory of the firm</td>
</tr>
<tr>
<td>Examples of potential users of performance measures</td>
<td>Anybody</td>
<td>Organizational management</td>
<td>Third-party payers, funders, regulatory bodies</td>
<td>Professionals, individual managers, organized patients’ groups, staff, unions, and so on</td>
</tr>
<tr>
<td>PRPM is the main source of data available</td>
<td>Yes</td>
<td>No. Internal monitoring of performance is likely to be ongoing</td>
<td>No. Data could be made available without being in the public domain</td>
<td>No. Other formal and informal sources of data exist</td>
</tr>
<tr>
<td>PRPM is likely to constitute a significant stimulus supporting action</td>
<td>Available evidence suggests that this is often not the case (see conditions below)</td>
<td>Potentially</td>
<td>Potentially</td>
<td>Potentially</td>
</tr>
<tr>
<td>Publicly reported performance measures will mostly be used as...</td>
<td>...a tool for resource allocation</td>
<td>...a tool for managerial interventions (although we believe this to be unlikely)</td>
<td>...a stimulus for action (actual allocation decisions likely to depend on other sources of measure)</td>
<td>...an asset for advocacy</td>
</tr>
<tr>
<td>Main necessary conditions</td>
<td>Data are valid</td>
<td>Data are valid</td>
<td>Data are valid</td>
<td>Data are valid</td>
</tr>
<tr>
<td></td>
<td>Users are competent</td>
<td>Organizational management was unaware of the performance situation but has the capabilities to intervene (highly unlikely)</td>
<td>Data are useful for intra-organizational stakeholders’ advocacy</td>
<td>Data are resistant to scheming attempts in data collection</td>
</tr>
<tr>
<td></td>
<td>Users are willing to give those measures a significant role in their choice</td>
<td></td>
<td>PRPM constitutes a significant stimulus for intervention through social structuring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercising choice is reasonably easy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implicit model of what drives human action</td>
<td>Rational maximization of self-interest</td>
<td>Rational pursuit of organizational goals</td>
<td>Social structuring</td>
<td>Self-conscious (but not necessarily rational) defense of personal preferences</td>
</tr>
</tbody>
</table>
**Change Through Managerial Interventions.** The simplest relation between performance measures’ release and performance improvement is seen in the top-down managerial-interventions model mentioned above. This model is based on a rational conception of management in which managers’ main role is to monitor activities and intervene to align resources, processes, and outcomes with organizational goals. This management control model corresponds to the single loop model in Argyris’s (1976) typology. In such a view, PRPM could provide actionable information to organizational management that allows it to put in place the necessary corrective interventions.

Although such a causal pathway is straightforward, it raises some perplexing questions, such as why management would need external reporting to assess internal performance, given that monitoring organizational processes and performance is a basic managerial task. Moreover, diagnosing problems is generally conceived as much easier than solving them, or as Berwick et al. (2003, p. 135) put it: “The ability to change should not be taken for granted.” If, in fact, an organization’s management requires external input to diagnose performance-related problems, then its capacities to actually use this information to intervene are likely questionable.

One counterargument to the criticism developed above is that PRPM provides comparative information about other providers’ performance, which is not readily available to managers (Barr et al., 2006). However, because such comparative information is devoid of much content or programmatic value (being unlikely to provide many usable cues about what structures or processes should be modified and in which way), its influence is, in our view, more appropriately conceptualized as a stimulus effect along the lines of a reputation pathway. We will return to this idea in more detail below.

**Change Through Social Structuring.** Rational conceptions of organizational behavior and management are unlikely to provide sound conceptual foundations to the change pathway, as evidenced by the inadequate capacity of the managerial-interventions pathway to explain the effect of PRPM. One core explanation for this relates to the concept of goal ambiguity, which is central to understanding many features of the change pathway. Rational conceptions of organizations as technical goal achievement systems take for granted that organizations have just one, or very few, consensual and explicit goals (Perrow, 1961). However, converging evidence (Cyert & March, 1963; March & Olsen, 1979; Perrow, 1961, 1963; Pfeffer, 1981; Pfeffer & Salancik, 1978/2003; Scott, 2003; Thompson, 1967/2004) suggests that organizations generally have numerous, sequential, and ambiguous goals. Health care services organizations are also generally viewed as especially complex in that regard (Perrow, 1961, 1963). However, while there is broad consensus that organizational goals are constantly evolving through goal-setting processes, there are multiple views on how those processes are structured.

Theories behind the social-structuring pathway suggest that organizational goal-setting processes will be deeply affected by external influences. In that view, organizations must live up to external expectations to obtain the resources they need from their environment. At a first level, this implies that external stakeholders’ use of publicly reported performance measures to modulate resource allocation is likely to strongly stimulate intra-organizational goal-setting processes (Hafner et al., 2011; Pfeffer &
Salancik, 1978/2003). Simply stated, performance improvement interventions may languish at the bottom of an organization’s list of priorities (agenda) until major external stakeholders show interest in publicly reported performance measures, thereby prompting (stimulus signal) the interventions’ prioritization by the organization. We will return later to the ways in which such prioritization processes can interact with PRPM. First, however, we would like to further extend our previous argument, as there are other theories that can push the causal pathway of external change beyond the deliberate intervention of external stakeholders. In organizational theory, the neo-institutional approach (DiMaggio, 1988; DiMaggio & Powell, 1983; Meyer & Rowan, 1991; Meyer & Zucker, 1989; Zucker, 1988) defends the idea that organizational behaviors are to a large extent unrelated to rational efforts at goal achievement. To survive, organizations have to incorporate goals and adopt processes that fit within broader social values. This is especially true in heavily regulated sectors and in the public and parapublic sectors. In such a view, the broader environmental acceptance of performance measures as legitimate assessments of organizational goal achievement will in itself push organizations to pay attention to those measures (Ginsburg, 2003). For example, a third-party payer modifying its reimbursement policies according to PRPM scores can contribute to a selection effect but will also send a strong message that might deeply structure underlying social values. The core idea is that making performance measures public and legitimizing them as an appropriate way to assess organizations’ goal achievement will slowly modify the social norms used to define organizational effectiveness (Pfeffer & Salancik, 1978/2003) and, in the end, affect organizations’ capacity to obtain resources. Central to this idea is the notion of long-term influence, wherein PRPM interventions will slowly creep into the structures and managerial processes of all organizations in a given field. In such a view, making performance data public is not a value-neutral exercise but rather both the sign of an evolution in social norms around the definition of organizational performance and a contributing factor to this evolution. As such, the distinction between PRPM interventions aimed at instrumental purposes and those resting on intrinsic valuing of organizational transparency and accountability in democratic society becomes blurred.

Change Through Internal Pressures. The internal-pressures pathway is similar to the social-structuring pathway, in that it also conceives of PRPM as a stimulus for organizations to prioritize certain performance-enhancing interventions within their overall agenda. However, conceptually it is anchored more in a political conception of organizations (Crozier & Friedberg, 1992; Perrow, 1961, 1963; Pfeffer, 1981; Pfeffer & Salancik, 1978/2003) and less in macro social-structuring perspectives. Organizations are conceived as loose coalitions of actors, each with their own agendas, preferences, and interests. In such a view, organizational goal-setting processes and the resource allocation and prioritization they imply are the result of intra-organizational political struggles among coalitions trying to impose their preferences.

One such model can be found in the classic work of Perrow (1961, 1963) on organization goal-setting, which rests, in large part, on a hospital-based case study. He suggests that, in such organizations, power is generally shared among three groups
(trustees, physicians, and administrators) in a “multiple leadership model.” In this model, decisions are the product of one of three scenarios: either all groups agree, or two groups agree and the third does not oppose them in a unified way, or the decision process is so incremental and path-dependent as to render structured opposition difficult. In the internal-pressures pathway, PRPM will affect the organization’s public reputation, which will in turn potentially upset internal stakeholders. According to such models of collective leadership and power in organizations (Denis, Lamothe, & Langley, 2001; March & Olsen, 1979; Perrow, 1961, 1963; Pfeffer, 1981), the impact of a reputation pathway is to a large extent explained by PRPM’s role in aligning the priorities of intra-organizational groups in decision-making coalitions (something Denis et al., 2001, would describe as leadership coalition coupling). This structuring effect on power coalitions inside organizations will in turn greatly increase the acceptability and feasibility of implementing performance improvement interventions.

Other strands of work that would support the internal-pressures model are more inclusive in their conception of power sources and influence inside organizations (Berry & Wilcox, 2009; Cohen, March, & Olsen, 1972; Crozier & Friedberg, 1992; March & Olsen, 1995). Those theories share a view that power is much less centralized in organizations than one might expect. Organizational goal-setting and decision-making processes will, to a large extent, depend on the level of mobilization of internal actors. Accordingly, here the “name and shame” logic of flagging an organization with a poor performance score will modify organizational behavior because it is likely to motivate internal actors to get involved in organizational politics. Internal actors such as clinicians, staff, individual managers, or representative bodies of those groups are likely to exert pressures collectively to support interventions to improve their institution’s public image (Hafner et al., 2011; Hibbard, 2008; Hibbard et al., 2005). However, the dissatisfaction of internal actors can lead to two forms of behaviors. The first is what Hirschman (1970) described as “voice,” which would fuel the organizational politics processes we just described. While such increased involvement in organizational politics and voice processes is based on individual actions, this individual involvement is expressed through collective action systems (Crozier & Friedberg, 1992; Pfeffer, 1981). The second form of behavior is individual “exit” (Hirschman, 1970), in which dissatisfied clinicians, for example, would decide to go work elsewhere. While this individual reaction is unlikely to improve performance in itself, it can constitute another powerful trigger for action. Ultimately, if the exodus of expertise and skills reaches a certain level, it can threaten the organization’s capacity to sustain its existence; in that case, it would then belong to a selection logic.

The same kind of internal pressures through voice can sometimes be exerted by patients, especially those forced to develop an enduring relation with one provider organization due to the nature of their needs (e.g., chronically ill patients or those in long-term hospitalization). Such situations are characterized by limited options for patients to vote with their feet (exit), and strong incentives for them to support interventions are likely to improve the care experience. In such a context, external information on organizational performance can be mobilized as an asset in patient-based advocacy supporting challenges to the status quo.
Depending on the strand of literature consulted, the conceptualization of internal actors’ mobilization will thus range from democratic-like advocacy processes (Berry & Wilcox, 2009; March & Olsen, 1995) to models anchored much more explicitly in the exercise of power relations (Alford, 1975; Crozier & Friedberg, 1992; Pfeffer, 1981). This also has much to do with underlying conceptions about what motivates human action, as we discuss in the next paragraphs.

**Underlying Models of Human Action**

Instrumental conceptions of PRPM as a way to improve performance imply that publication of the data will trigger behavioral modifications in some actors in the system and that those modifications will, in turn, improve average organizational performance. The four models presented above show that PRPM could have an impact on different groups, ranging from patients to clinicians, managers, and external stakeholders. However, those models differ not only in whose behavior they target but also in their underlying conceptions of the motivations behind human behavior modifications.

The selection pathway rests explicitly on a rational conception of *homo economicus*, in which humans are seen as naturally both willing and able to maximize their self-interest in a rational way. In such a view, mandatory PRPM interventions make sense because they lower the cost of information for end-users and are thereby likely to increase its use. The managerial-interventions pathway shares with the selection model the rationality postulate that humans will coherently try to achieve explicit goals. However, this model conceives of humans (here, the organization’s managers) as rationally contributing to the achievement of collective goals different from their own self-interest. Berwick et al. (2003) explicitly state this underlying assumption that managers and clinicians alike will strive to improve performance because they “simply want to be better.” In such a view, managers and clinicians will have at heart the pursuit of organizational performance and will be interested in any data that could help them identify opportunities to improve performance. The problem with both these models is that their assumptions about human behavior are poorly supported by evidence. First, humans seem to behave in much more complex ways than predicted even by bounded views of rationality (Bourdieu, 1980, 1984). Second, it is hard to reconcile the view that patients would behave to further their self-interest with the view that managers would ignore their self-interest in pursuit of organizational objectives.

We believe the other two change pathways are based on more realistic conceptions of human behavior. The internal-pressures pathway shares with the selection model the postulate that humans will strive to further their self-interest (although, in some iterations of this pathway, this might not be strictly self-interest so much as disinterested preferences bordering on Kantian duties). However, in the internal-pressures pathway, humans are conceived as striving to defend their preferences in collective systems as opposed to competitive markets. Hence, rather than relying on the aggregation of purely individual strategies, this pathway is based on the idea that participants will get involved in collective political struggles. Moreover, this pathway logically requires no assumption of simple rationality. People will have subjective
perceptions, complex sources of preferences, and imperfect understanding of the collective rules. Publicly releasing performance data will, in such cases, have much less predictable consequences, as their appropriation in political games will be deeply idiosyncratic. We return to this issue in the Discussion.

Finally, the social-structuring pathway differs from the other three models in its reliance on much more structuralist assumptions regarding human behavior. Although this model does not negate free will, it rests on the idea that human behavior is structured by collectively constructed social norms and external pressures. As complex social beings, humans are neither rational nor completely free. They exert their free will within the constraints set by social norms, and they defend preferences that are also socially structured. In such a view, PRPM both reflects changes in social norms and reinforces the legitimacy of those new norms. However, the interest of such a structuralist perspective is mostly rooted in its assumptions about the interdependence of the individual and collective levels. As discussed above, much of the change pathway’s potential depends on the level of internal actors’ involvement in the organization’s functioning and politics. Views of humans as rational actors focused on the achievement of functionally conceived goals will fail to explain why managers or physicians would be concerned about their hospital’s reputation if it did not affect their revenues, market share, or work conditions. Conversely, structuralist views rest on the idea that what explains the level of involvement is not the empirical impact of PRPM but the subjective value that actors grant it (Bourdieu, 1994; Sahlins, 1976) and that such individual beliefs are themselves deeply structured by broader social values. Hence, social values supporting the implementation of PRPM interventions also structure individual reactions to the interventions.

Hamblin (2008a, 2008b) published very insightful papers on models of human action underlying the public release of performance data that conclude with a typology of persons (saints, honest triers, reactive gamers, and rational maniacs). We do not dispute the fact that different people will have different reactions. Rather, our discussion highlights the fact that different models of behavior modification make different assumptions about the nature of the average reaction to the publication of performance data and that those assumptions ought to be made explicit, as they have tremendous impact on the nature of expected effects and the putative causal links.

**Discussion**

What can this typology of causal pathways between PRPM and the improvement of average performance tell us about the instrumental use of performance data? We would like to discuss two points regarding its implications for practice and a third point about its implications for research.

First, in our view, it makes sense to publicly release performance data even if the evidence suggests very little can be expected from the selection pathway. There is probably much more going on when data are made public than simple selection models of market-based competition would indicate. One implication of this idea is that the practical impact of PRPM interventions will be much fuzzier and more complex than
what the selection pathway suggests. Such interventions are likely to trigger many kinds of behavior modifications simultaneously in different groups. Those actions can be either mutually reinforcing or opposing. It is easy to imagine the mutually reinforcing effects of external pressures through social norms and of internal pressures through political games, both contributing to putting performance-enhancing interventions high on the organizational agenda. However, it is equally easy to imagine a situation in which social norms defining organizational success through public performance scores could intensify managers’ efforts to tightly control clinical processes but where the conjunction of tight top-down controls and disputable organizational reputation would sour internal politics and lead to high turnover of human resources, both of which are likely to lower organizational performance. We believe the pathways defined in this article can help in making sense of and monitoring the empirical effects of PRPM to design interventions that are more likely to be mutually reinforcing.

The second point has to do with the processes and methods underlying PRPM. As we propose in this article, from an instrumental perspective what is important is triggering change, not partaking in the never-ending quest for the perfect instrument or method. What the internal-pressures and social-structuring pathways add to this standpoint is that both suggest the processes of making data public, and the methods used to measure performance will in themselves be objects of much debate and attention. Both the evolution of social norms and the political reaction to public scores will have a feedback effect on processes and methods, and this is likely to create a continuous evolution at those levels. The problem is that the theories behind both pathways tend toward a pessimistic view of the direction of this evolution. Neo-institutionalism suggests that the most powerful organizations will be able to influence social norms to suit themselves rather than the reverse. This is quite in line with political theories that generally conceive power relations as asymmetric and their results as favoring the most powerful groups. Without external oversight, both pathways are thus likely to feed evolutionary processes that will tend to render the methods and processes behind PRPM harmless to central stakeholders. Such processes are not propitious to improvement in actual average performance. This suggests, in our view, that countervailing pressures need to be exerted and that any third party in charge of the measurement processes will need strong backing to remain capable of promoting neutrality and validity in the inescapable methodological debates.

This idea also has implications for the content of the information released. The managerial-interventions pathway is the only one in which the data made public need to provide detailed programmatic information that can be used to draft managerial interventions (Brien & Ghali, 2008). The other two change pathways mostly rely on a simple stimulus effect. This implies that interventions could be effective while relying on much lighter information content in what is made public. This, in turn, is likely to facilitate the communication processes involved. Our typology suggests it can make a lot of sense that the measures made public be designed primarily for high stimulus potential rather than for informative value. Such a view raises the question of the strength and focus of the stimulus signal. Too much pressure will distort organizational perspectives, and too little will be ignored. Personal pressure on executives will
likely increase their incentive to manipulate the data collection processes, especially in organizations where the level of managerial control over clinical processes should not be overestimated (Hamblin, 2008a, 2008b). On the other hand, shielding executives and clinicians from the pressures created by the PRPM removes any stimulus effect and makes the whole enterprise irrelevant.

Finally, our third point has to do with implications for research. Although the selection pathway is consistently shown both on empirical and theoretical grounds not to be the most promising or realistic way to improve performance, it remains the focus of most research in the domain. Moreover, as this article suggests, the limitations of the selection pathway do not imply that PRPM interventions are doomed. More research into the various operationalizations of the more promising pathways and analysis of the processes through which they actually influence performance would be of interest. Such research could, for example, focus on system-level analysis of the evolution of social norms and perceptions, organizational level analysis of stakeholders’ reactions to PRPM interventions and mobilization processes, or experimental designs to measure the stimulus potential of various reporting approaches.

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