Dissemination of performance information and continuous improvement
A narrative systematic review
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Abstract
Purpose – Developing a performance measure and reporting the results to support decision making at an individual level has yielded poor results in many health systems. The purpose of this paper is to highlight the factors associated with the dissemination of performance information that generate and support continuous improvement in health organizations.

Design/methodology/approach – A systematic data collection strategy that includes empirical and theoretical research published from 1980 to 2010, both qualitative and quantitative, was performed on Web of Science, Current Contents, EMBASE and MEDLINE. A narrative synthesis method was used to iteratively detail explicative processes that underlie the intervention. A classification and synthesis framework was developed, drawing on knowledge transfer and exchange (KTE) literature. The sample consisted of 114 articles, including seven systematic or exhaustive reviews.

Findings – Results showed that dissemination in itself is not enough to produce improvement initiatives. Successful dissemination depends on various factors, which influence the way collective actors react to performance information such as the clarity of objectives, the relationships between stakeholders, the system’s governance and the available incentives.

Research limitations/implications – This review was limited to the process of knowledge dissemination in health systems and its utilization by users at the health organization level. Issues related to improvement initiatives deserve more attention.

Practical implications – Knowledge dissemination goes beyond better communication and should be considered as carefully as the measurement of performance. Choices pertaining to intervention should be continuously prompted by the concern to support organizational action.

Originality/value – While considerable attention was paid to the public reporting of performance information, this review sheds some light on a more promising avenue for changes and improvements, notably in public health systems.

Keywords Quality improvement, Performance measurement, Knowledge sharing, Continuous improvement, Decision making, Organization, Knowledge transfer, Health services sector

Paper type Literature review

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1. Introduction
In most industrial countries, health systems have committed themselves to implementing reforms in order to resolve dysfunctions and achieve sustainability (Tuohy, 1999; Saltman, 2002; Saltman et al., 2002). A common approach consists in developing performance evaluation and reporting systems to better support decision-making (Ferlie et al., 1996; de Lancer Julnes and Holzer, 2001; Moynihan and Pandey, 2005; Baker et al., 2008). The assumption is very often that supporting the decisions of patients/health consumers (or their representatives) will channel demand for the most effective clinical practices, thereby acting upon providers’ offers. Yet, this way of conceiving the intervention has yielded poor results. Several systematic reviews (Marshall et al., 2000a, b; Schaufler and Mordavsky, 2001; Fung et al., 2008; Shekelle et al., 2008) and some comprehensive reviews (Brown et al., 2005; Wallace et al., 2007) suggest that public reporting of performance information has little influence on decision-making and, by extension, on clinical practices. Furthermore, undesirable consequences have been observed, such as public image distortions, staff demoralization, and the adoption of defensive or tactical behaviors by care providers (Werner and Asch, 2005; Werner et al., 2005; Scott and Ward, 2006).

However, there is strong evidence which suggests that targeting dissemination at the health organization level may gradually lead to desired improvements, since managers and clinicians are more likely to use this information and adopt behaviors that will help improve processes and outcomes (Marshall et al., 2000a, b; Brown et al., 2005; Morris and Zelmer, 2005; Wallace et al., 2007; Fung et al., 2008; Shekelle et al., 2008). Such interventions are consistent with the theory of continuous improvement, in that they rely on mobilizing organizational actors, their professional commitment, and collective action to encourage change in processes to improve quality (Berwick, 1989; Blumenthal and Kilo, 1998; Shortell et al., 1998; Baker et al., 2008). Here, dissemination means an active intervention aiming at communicating tailored information to a particular target audience (Graham et al., 2006); it differs from passive, unplanned and uncontrolled diffusion.

The systematic reviews published to date have mainly concentrated on interventions that promote broad dissemination of information and, above all, attempt to examine the impacts on decisions, particularly the decisions of patients or care consumers. None of them are focused exclusively on the dissemination to actors in health organizations, nor on the factors and processes by which interventions lead to the desired effects. As noted by Pawson et al. (2005), performance evaluation is a complex, dynamic intervention that follows non-linear and uncertain paths in response to the contexts and multiple systems of the social relationships involved. Therefore, the success of such evaluations depends on the cumulative success of numerous processes. As a result, it is important to identify these processes in order to make the most of the considerable resources invested and to avoid the undesirable consequences that have frequently been observed.

The purpose of this review is to highlight the factors associated with the dissemination of performance information that generate and support continuous improvement in health organizations.

1.1 Definitions
For the purposes of this review, performance evaluation refers to all the activities and resources used in the production, dissemination and use of credible and valid
information in order to assess the extent to which an entity, a program or a system accomplishes what is expected in terms of certain goals, standards or criteria (satisfaction, efficiency, productivity, safety, equity, etc.). Widely understood, the concept of performance includes quality in healthcare (Sicotte et al., 1998; Leggat et al., 1998; Contandriopoulos, 2008). Moreover, the concept of intervention refers to the process by which a legitimate actor or authority (a department, an agency, etc.) intervenes to incite the development of performance evaluation practices through an organized system of activities and resources. In other words, an intervention concerns the implementation of a performance evaluation instrument. It is also an instrument of governance, such as other official instruments (e.g. legislative and regulatory, economic and tax, etc.) (Lascoumes and Le Galès, 2004), since such instruments are used to operationalize the action of a public authority and organize relationships between governance stakeholders. More specifically, we seek to understand a key process of performance evaluation: the dissemination of information. Dissemination cannot be understood without examining underlying issues related to the objectives, the measurement system, the potential users and their realities. These complementary dimensions will also be considered.

2. Method
The research objective involves highlighting evidence that will articulate the factors affecting the dissemination of performance information. It is less a question of knowing if interventions lead to expected results than understanding what allows them to succeed. Our systematic data collection strategy includes different types of evidence. The narrative synthesis method allows for an iterative process that combines evidence by focusing on the explicative mechanisms that underlie the intervention.

2.1 Eligible texts and data collection
While quantitative research on effectiveness can shed some light on factors affecting interventions, qualitative research provides more substantial detailed data to understand intervention processes or mechanisms within their context (Mays et al., 2005; Petticrew and Roberts, 2006). Empirical and theoretical articles, both qualitative and quantitative, have therefore been included in this review, in addition to prior systematic or exhaustive reviews. Editorials and commentaries have been included, but only as secondary data and used if relevant in the discussion section to clarify results from the primary body of literature.

Including a wide variety of data sources that comprise methodologies of varying quality poses practical problems in terms of which tools to use to classify the evidence (Øvretveit et al., 2002; Greenhalgh et al., 2004; Lohr, 2004; Mitton et al., 2007). However, the problems in the case at hand are slightly different, since the objective here is to generate explanations. The quality of the evidence lies less in the internal validity of each study than it does in its external validity (Mays et al., 2005), meaning the accuracy of the results and how well they can be generalized to other contexts (Petticrew and Roberts, 2006). In addition, triangulating different sources of data may compensate for certain shortcomings in terms of the quality of individual studies (Petticrew and Roberts, 2006). In other words, we believe that the greater the number of studies from different contexts producing convergent results, the greater their explanatory power.
The study’s sample was obtained by searching the Web of Science, Current Contents, EMBASE and MEDLINE bibliographical databases for literature in English and French published between 1980 and 2008 (and an update to 2010). A comprehensive list of keywords in both languages was first developed using TextSTAT freeware, based on documents that offer international and North American points-of-view on concepts related to the diffusion of performance information: the action (release, disclosure, reporting, etc.), the object (report card, hospital report, etc.), the subject (performance, quality, etc.) and the context (clinical, hospital, medical, health, care). Although the same procedure was applied in both languages, only a few French papers emerged at the initial stage and none remained at the end of selection. This may be explained by an indexation bias in the searched databases, as well as low French language scientific production on this subject.

The following inclusion criteria were applied:

- the article deals with information on diffusion issues;
- the diffusion is directed at users in health organizations in particular;
- the intervention is undertaken wholly or in part, explicitly or implicitly, for the purposes of continuous improvement or quality improvement; and
- the article explicitly helps identify dissemination factors or processes.

Two researchers were involved throughout the article selection and analysis process and they applied the same criteria. A third member of the team then validated the results of the analysis using the original articles. At each stage, problem cases were discussed and resolved by consensus.

Figure 1 presents the flow chart of the method used to collect and select relevant scientific articles. More detailed information on the methodological process is available upon request. As shown, choice on the basis of the study’s title and then by title and abstract was two determinant stages of exclusion. Due to the synthesis approach described further on, additional articles were also rejected during the analysis process because of their marginal and divergent results in regard of the overall identified articles. In total, more than eighty percent (80 percent) of the initial references were rejected. This percentage could be explained by the inclusive set of keywords chosen to allow for a large literature overview. Poor database indexing and the wide diversity of qualitative research may also explain such a result (Mays et al., 2005).

It should be mentioned that we updated the sample for the period 2008-2010. The same process was used to select and analyze the articles. Of the 202 articles initially identified in this update, 19 met the selection criteria and were retained. This included a new systematic review addressing initiatives to provide feedback based on information in medical records (van der Veer et al., 2010). None of these articles diverged from the previous results.

2.2 Synthesis approach

This synthesis was informed by the following considerations: the data we needed to collect and analyze arose from papers with differing methods, objectives and settings, and we needed to understand the processes of interventions being studied and their settings in order to properly comprehend the data. Thus, the data in this review are
fundamentally narrative in the sense that it is through the papers’ narrative structure that we could access their results and contextual significance.

Inspired by the work of May and colleagues (Mays et al., 2005), we adopted a narrative synthesis method in order to systematically and transparently organize, describe, explore and interpret the broad range of articles selected. A narrative synthesis is a pragmatic and flexible method that takes a textual approach to the process of synthesis, while being designed to encourage careful judgment at each step of the review process (Mays et al., 2005). In terms of the synthesis practice, our method is similar to what Forbes and Griffiths (2002) call an “analytical or theoretical synthesis” and draws on some realistic principles (Pawson et al., 2005) in that it is designed to build explanations across interventions that share similar underlying “theories of change”. A realistic approach postulates that the results of an intervention are necessarily the result of processes, so these results are always interpreted in terms of the context of the intervention (Forbes and Griffiths, 2002). According to Pawson et al. (2005), the strength of this approach lies in the subtle view it takes of
interventions and the refined theoretical approach it allows. In the present study, context was taken into account from the article selection and coding stage.

Our synthesis approach has four stages. First, a framework was developed to organize and synthesize data. Second, two researchers read all the articles and prepared a data extraction form for each in order to summarize the study design, intervention, setting, as well as the factors associated with dissemination that we coded using our framework’s categories (new categories being created as required). Third, we performed a preliminary synthesis to develop an initial description of the collected data. Grouping and clustering of coded data allowed for the identification of patterns in the processes that are reported as impacting the interventions in some way. Preliminary results of the analysis were then validated by a third researcher, not involved in the previous analysis process, using both data extraction forms and the original script of selected papers. Fourth, we developed a detailed analysis of the factors associated with dissemination. Inspired by the technique of conceptual triangulation (Foster, 1997), this iterative approach established points of convergence and divergence among the different results, produced explanations for the observed relationships, and completed the quality assessment of the various articles (based on convergence/divergence criteria).

2.3 Framework for narrative synthesis
A classification and synthesis framework was developed, drawing on the knowledge transfer and exchange (KTE) literature. We thus postulated that performance information could be seen as a type of knowledge, in the same way that evaluation or research results are also types of knowledge. The framework clarifies the underlying assumptions concerning how dissemination of performance information is meant to work in order to generate and support continuous improvement in health organizations. It was primarily used to interpret the review’s findings; however, the output may be the foundation of a theory of change as it is defined by Weiss (1998).

There are two trends worth noting in the work on KTE. First, the theory on processes has evolved from viewing processes as linear and unidirectional (from a “sender” to a “receiver”) to seeing them as interactive and sometimes deliberative, founded in sustained communications processes and the active involvement of users (Lomas, 1997; Dobbins et al., 2002; Lavis et al., 2003; Kothari et al., 2005; Thompson et al., 2006). More recent models have underscored the important role played by contexts of use. They recognize the dynamic, unpredictable and more or less rational nature of the decision-making processes (Weiss, 1982; Baker et al., 2004) and of competitive games and selections between different types of knowledge, influence and interests (Lindblom and Cohen, 1979; Knott and Wildavsky, 1980; Contandriopoulos et al., 2010).

Our conceptual framework (see the list below) was structured using the generic components of a KTE strategy as formalized by Lavis et al. (2003): the message (knowledge), the audience (users), the message carrier (producers), the transfer (dissemination) process and its means, and the evaluation or feedback of the intervention:

1) Intervention context:
   - System’s context of governance.
   - Objectives of the intervention.
   - Credibility of knowledge producers.
Work by Jacobson et al. (2003) reveals components related to users, such as user needs, organizational context, and the relationship between users and the issues raised by the knowledge produced. Finally, the framework draws on work by Lascoumes and Le Gales (2004) in order to conceptualize the intervention within the broader context of the healthcare system. Through their sociopolitical perspective on governance instruments, they bring additional inputs about what KTE literature tends to neglect, the “why” question (or the objectives), and suggests that the system’s context of governance shapes the relationships between stakeholders and their perceptions of the intervention.

More specifically, the system’s context of governance refers to the environment in which activities are regulated in a broad sense (standards, policies, procedures, etc.). In this context, the knowledge producer (a central authority, public organization, etc.) is one that produces or disseminates performance-related information, which is both the data itself and the discourse on intervention and utilization. The organizational context refers to the context of health organizations with their specificities (history, culture, process, resources, etc.) where the information to be used is disseminated. Users are defined as the actors to whom the knowledge and the discourse on performance are addressed and who interact in specific organizational contexts. Knowledge refers to all the information generated by the performance measurement system. It is formalized on paper or in electronic form and used to evaluate performance. The system of measures refers to the instruments and other devices, methods and procedures used to build,
measure, and use performance indicators. The dissemination process is all the activities and resources used by producers to transmit as well as promote and support the use of knowledge in organizations. Finally, the utilization process refers to all the users’ activities and resources for appropriating knowledge in order to engage in improvement initiatives.

3. Results
The primary sample consisted of 114 articles, including seven systematic or exhaustive reviews. These seven reviews were not used to derive the results but were used in the discussion section.

3.1 Interventions in the system’s governance context
3.1.1 Governance context. The articles examined two different types of issues. The first type concerns the influence of political, administrative and legislative environments on the intervention. Political or administrative motivations, organizational mandates or the dynamics among actors may enter into competition and generate conflicts or influence stakeholders’ positions on the intervention (Kanouse et al., 2004; Marshall et al., 2002, 2004; Mehrotra et al., 2003). Furthermore, the sometimes opposing priorities of stakeholders (Ginsburg, 2003); pressures of many kinds, including political and economic pressures (Marshall et al., 2004); and excessive regulation of the system (Zinn et al., 2008) form a difficult context of governance for the intervention.

The second type of issue concerns how the intervention is aligned with the governance context. A coherent intervention or one that is well integrated into the context fosters the commitment of potential users (Marshall et al., 2004), their motivation to try and improve health services (Stewart and Greisler, 2002), and attainment of results (Mukamel et al., 2007). More specifically, the intervention must reflect societal values (Mor, 2005) and, even more clearly, be consistent with the system’s other instruments of governance (Marshall et al., 2004; Zinn et al., 2008; Stewart and Greisler, 2002; Mukamel et al., 2007; Cheng and Thompson, 2006; Epstein, 1998; Mannion and Davies, 2002; Marshall et al., 2000a, b; Morris and Zelmer, 2005).

The intervention will therefore be facilitated if it is aligned with the accreditation process (Epstein, 1998) or even the overall improvement strategy (Morris and Zelmer, 2005), with accountability mechanisms (Morris and Zelmer, 2005), and with financing mechanisms (Stewart and Greisler, 2002; Mukamel et al., 2007; Mor, 2005; Cheng and Thompson, 2006; Epstein, 1998; Mannion and Davies, 2002; Marshall et al., 2000a, b; Morris and Zelmer, 2005; Badger, 1998). The dissemination of information must therefore be integrated into a group of strategies and complementary resources aimed at improving performance (Bricker et al., 2010; Clarkson, 2010; Duvalko et al., 2009; Kurtzman, 2010). Such integration sends a clear signal that the intervention and the information being disseminated are important (Marshall et al., 2004). An intervention based on shared standards for indicators, methods, adjustments, and comparables appears to be more favorable (Mannion and Davies, 2002; Burack et al., 1999). In addition, the pursuit of performance in organizations must be consistent with the goal of performance across the health system (Centre for Health Services and Policy Research, 2004), in particular by balancing the measures taken at the local level with those taken at the system level (Leatherman and McCarthy, 1999).
3.1.2 Intervention objectives. An intervention may have multiple objectives: quality improvements, cost control, public accountability, support for consumer decision-making, etc. The problem of ambiguity in these objectives or a limited understanding of them and their implications for potential users, but also for producers, is often mentioned (Kanouse et al., 2004; Mehrotra et al., 2003; Marshall et al., 2000a, b; Morris and Zelmer, 2005; Centre for Health Services and Policy Research, 2004). This situation undermines the coherence and effectiveness of interventions. Clearly stated objectives play a fundamental, positive role in the design, implementation, and evaluation of interventions (Kanouse et al., 2004; Marshall et al., 2000a, b; Morris and Zelmer, 2005). Such objectives indicate expected actions and desired results, and must make sense and be realistic in the context of users’ actions (Kanouse et al., 2004). Moreover, several articles demonstrate the importance of avoiding the development of a culture of blame over performance results (Marshall et al., 2002; Cheng and Thompson, 2006; Clarkson, 2010; Marshall et al., 2003) or an overly strict approach to control (Mannion and Davies, 2002).

3.1.3 Credibility of knowledge producers. The articles often discuss the need for potential users to recognize the authority of knowledge producers (Kanouse et al., 2004; Mannion and Davies, 2002; Hibbard et al., 2003; Mannion and Goddard, 2003; Kissam et al., 2003). Having a single, credible central authority that is responsible for measurement and dissemination favors success (Kanouse et al., 2004; Hibbard et al., 2003), since it can standardize the production and dissemination of information on performance (Mannion and Davies, 2002; Schneider et al., 2004). An independent, external verification of data and measures is also beneficial (Mannion and Goddard, 2003; Bensimon et al., 2004).

3.2 The intervention in the users’ organizational context

3.2.1 Users. One of the first issues discovered is the proper identification of users. This stage is key to the design of the intervention, since it leads to an understanding of the needs, resources and capabilities, as well as action modes and access to knowledge (Kanouse et al., 2004; Ginsburg, 2003; Morris and Zelmer, 2005; Mason and Street, 2006). It also involves carefully selecting the users who can most effectively mobilize knowledge and act to improve health services (Brien et al., 2009; Hutchinson et al., 2009). While some authors discuss the advantages of public reporting (Hibbard et al., 2003; Davies, 2001; Hibbard et al., 2005), most of the articles in this sample describe this approach as ineffective, inappropriate or incomplete (Mehrotra et al., 2003; Burack et al., 1999; Hibbard et al., 2003; Davies, 2001; Jiang et al., 2001; Baker et al., 2002; Pham et al., 2006; Casalino et al., 2007a, b; Hofer et al., 1999; Narins et al., 2005; Werner and Asch, 2005; Werner et al., 2005; Jha and Epstein, 2006; Davies, 1998; Davies and Lampel, 1998; Chassin et al., 1996; Epstein, 1995). An important issue is whether it is useful to organizations to have content diffused to the general public. It would appear that content directed to the general public can provide misleading comparisons between health facilities and is not a good enough source of information taken on its own (Badger, 1998). And since such content has fewer indicators, it is difficult to react to it appropriately (Jiang et al., 2001). In contrast, content that is tailored to the needs of users in organizations is more effective at motivating the actors involved to affect improvements (Topol and Califf, 1994). This is particularly true in the public sector, where there is little competition to attract patients (Guru et al., 2006)[49].
3.2.2 Organizational context. A good understanding of organizational contexts is important to creating favorable conditions for an intervention. The literature converges on the need to establish a context in which knowledge, learning, and experimentation are valued (Barr et al., 2008; Siu et al., 2009; Werner et al., 2009).

More specifically, the favorable factors observed include: a culture that encourages actors to become interested in effecting improvements, to become informed and to mobilize the knowledge for this purpose (Badger, 1998; Kissam et al., 2003; Barr et al., 2006; Parkosewich and Funk, 2005); a supportive and personally committed administrative team (Parkosewich and Funk, 2005); a dynamic community where learning aimed at shared objectives is valued and supported (Mukamel et al., 2007; Mannion and Davies, 2002; Badger, 1998; Centre for Health Services and Policy Research, 2004; Kissam et al., 2003; Davies and Lampel, 1998; Barr et al., 2006; Parkosewich and Funk, 2005; Rangachari, 2008; Hickey et al., 2004); a dynamic environment that encourages the sharing of information and expertise to encourage the inclusion of contextual factors and tacit knowledge in performance evaluations (Davies and Lampel, 1998) and change management (Mukamel et al., 2007); and an environment that fosters experimentation and innovation (Marshall et al., 2003; Barr et al., 2006; McNamara, 2006). Other factors identified as favorable include a spirit of competition within (Badger, 1998) and between (Zinn et al., 2008) organizations. In addition to these factors, it is important to consider any barriers that may be present (rules, standards, habits, physical space, cognitive barriers, etc.) (Kanouse et al., 2004).

In fact, the design of the intervention needs to be consistent with organizational contexts so that potential users will be interested and able to make use of the information disseminated (Kanouse et al., 2004; Burack et al., 1999; Centre for Health Services and Policy Research, 2004; Kissam et al., 2003; Werner and Asch, 2005). This requires promoting a culture of continuous improvement, but also allocating resources to develop interventions and mobilize potential users (Centre for Health Services and Policy Research, 2004). It is therefore necessary to understand the mechanisms by which dissemination can lead to improvements, and to design and promote content accordingly (Werner and Asch, 2005).

3.2.3 Users’ needs. A crucial stage in the design of interventions consists of understanding the targeted users’ needs for information and making adjustments to the knowledge without losing sight of the intervention’s objectives (Kanouse et al., 2004; Ginsburg, 2003; Morris and Zelmer, 2005; Clarkson, 2010; Marshall et al., 2003; Mason and Street, 2006; Werner and Asch, 2005; Marshall et al., 2000a, b; Spoerri and Ullman, 1997; Cheng et al., 2010; Heenan et al., 2010; Mack et al., 2005).

Several articles note how certain types of information are of particular interest to users. Even though clinical knowledge has the advantage of closely reflecting the reality of health professionals (Krumholz et al., 2006), it does not allow them to see how their practice influences health outcomes (Badger, 1998; Putnam et al., 2006; Ireson et al., 2002). It is easier to act on processes than on health outcomes and, information on processes is essential in order to understand how health outcomes have been obtained. As a result, managers and clinicians are very interested in having data on processes (Mannion and Davies, 2002; Kissam et al., 2003; Tu and Cameron, 2003; Matthes et al., 2010). In fact, a balance needs to be found between information on processes and disseminated results (Mannion and Davies, 2002; Morris and Zelmer, 2005; Badger, 1998; Kissam et al., 2003; Brien et al., 2009; Mukamel and Spector, 2003).
Another issue is whether the information should be comprehensive or more selective or simplified. Users in health organizations would appear to prefer comprehensive content (Leatherman and McCarthy, 1999; Werner and Asch, 2005; Cheng et al., 2010; Werner et al., 2008a; West et al., 1997; Barr et al., 2002). Content that is too focused or that does not allow for both specific and overall performance evaluations should be avoided (Leatherman and McCarthy, 1999; Cheng et al., 2010).

Furthermore, the articles demonstrated the value of measures that establish relationships between costs, effectiveness, and quality of care (Barr et al., 2002), that take into account the systemic and multidimensional nature of performance (Werner et al., 2008a), and that allow regional (Burack et al., 1999) or national (Cheng and Thompson, 2006) comparisons.

3.2.4 User commitment. The commitment of potential users is necessary. While there are examples in which stakeholders were bought into an initiative and were committed to its success, sometimes in response to specific legislation (Pham et al., 2006; Chiu et al., 2007; Baker et al., 2003), there are also examples illustrating the opposite (Clough et al., 2002; Schneider and Epstein, 1996).

The articles discuss many factors that foster commitment, the most cited being the stakeholders’ involvement in the various stages of the intervention (Clarkson, 2010; Leatherman and McCarthy, 1999; Casalino et al., 2007b; Barr et al., 2006; Rangachari, 2008; Marshall et al., 2000a, b; Baker et al., 2003; Rosenthal et al., 1997). The same can be said of the active involvement of leaders and champions in organizations (Kanouse et al., 2004), in particular, clinical leaders (Rangachari, 2008; Rowan et al., 2006).

Commitment is also fostered by other factors, such as the measures selected and the content disseminated (Kanouse et al., 2004; Marshall et al., 2003), the dissemination strategy selected (Davies, 1998), coherence with other incentive strategies (Marshall et al., 2004; Stewart and Greisler, 2002; Marshall et al., 2000a, b), emphasizing learning and improvement rather than blame (Marshall et al., 2002; Mannion and Davies, 2002; Clarkson, 2010), opportunities for personalized/private feedback (Goldstein and Fyock, 2001), and intervention planning that pays attention to the perceptions of stakeholders (Casalino et al., 2007b; Spoeri and Ullman, 1997).

3.3 Knowledge: the generated and disseminated content
3.3.1 Relevance. A great number of articles address the issue of the relevance of the knowledge to users (Ginsburg, 2003; Mor, 2005; Cheng and Thompson, 2006; Epstein, 1998; Mannion and Davies, 2002; Marshall et al., 2000a, b; Burack et al., 1999; Centre for Health Services and Policy Research, 2004; Leatherman and McCarthy, 1999; Marshall et al., 2003; Mannion and Goddard, 2003; Mason and Street, 2006; Casalino et al., 2007b; Narins et al., 2005; Davies, 1998; Epstein, 1995; Hickey et al., 2004; Spoeri and Ullman, 1997; Cheng et al., 2010; Krumholz et al., 2006; Putnam et al., 2006; Ireson et al., 2002; Tu and Cameron, 2003; Matthes et al., 2010; Werner et al., 2008b; West et al., 1997; Barr et al., 2002; Chiu et al., 2007; Clough et al., 2002; Rowan et al., 2006; Poker et al., 2004; Robinowitz and Dudley, 2006; Dimick et al., 2010). It is examined from different points-of-view, starting with indicator selection (Epstein, 1998; Marshall et al., 2000a, b; Casalino et al., 2007b; Narins et al., 2005; Poker et al., 2004) and then in terms of more general aspects: the completeness of the knowledge and how it is contextualized (Davies, 1998; Epstein, 1995; Ireson et al., 2002; Matthes et al., 2010), the specificity and complexity that is appropriate to the targeted users (Ginsburg, 2003; Centre for Health
Services and Policy Research, 2004; Ireson et al., 2002; Matthes et al., 2010), the alignment of the indicators with the ability of these users to take action (Centre for Health Services and Policy Research, 2004; Leatherman and McCarthy, 1999; Brien et al., 2009; Hutchinson et al., 2009), and the alignment with expected improvements (Putnam et al., 2006; Dimick et al., 2010). As mentioned above, a balance needs to be achieved between the indicators used.

The literature identifies three forms of balance: improving the utility of the information without compromising its accuracy or validity (Dimick et al., 2010), meeting expectations for informative and comprehensive content while ensuring that it is presented in an understandable manner (Mor, 2005; Werner and Asch, 2005; Werner et al., 2008a, b), and successfully targeting the needs of potential users among all the needs and interests in play (Kanouse et al., 2004; Ginsburg, 2003; Leatherman and McCarthy, 1999; Marshall et al., 2003; Mason and Street, 2006; Brien et al., 2009; Hutchinson et al., 2009; Cheng et al., 2010; Mukamel and Spector, 2003; Robinowitz and Dudley, 2006; McKibben et al., 2006). Developing “multifunctional reports” that try to combine several points-of-view represents a barrier to the appropriate use of the data (Kanouse et al., 2004; Ginsburg, 2003; Marshall et al., 2003). In short, the issue of the knowledge’s relevance leads to the need to consider many aspects related to both the content and its format (Mor, 2005; Hickey et al., 2004; Christianson et al., 2010). One article identifies a series of indicator criteria to be considered: simplicity, flexibility, acceptability, representativeness, timeliness, stability and data quality (Christianson et al., 2010).

3.3.2 Quality. The articles often report that the rigor of the process by which knowledge is generated is a critical factor. It determines the quality of the data, particularly in terms of its reliability and validity, and quality data influences the perceptions and attitudes of potential users (Leatherman and McCarthy, 1999; Marshall et al., 2003; Werner and Asch, 2005; Heenan et al., 2010; Glance et al., 2007). According to the articles reviewed, high quality data makes the knowledge useful (Ginsburg, 2003; Morris and Zelmer, 2005) and acceptable (Ginsburg, 2003; Localio et al., 1997), and mobilizes potential users (Marshall et al., 2004).

Many articles discuss problems related to the quality of the knowledge disseminated. The problems are associated with data coding practices or how the data is originally collected (Burack et al., 1999; Hibbard et al., 2003; Mannion and Goddard, 2003; Davies and Lampel, 1998; Krumholz et al., 2006; Matthes et al., 2010), computer processing (Eisen and Dickey, 1996), the harmonization of data from different sources or contexts (Hofer et al., 1999; Epstein, 1995; Gruber and Rudnitsky, 2002; Landon and Normand, 2008; Green and Wintfeld, 1995), the timeliness of the data (Kissam et al., 2003), the method used to adjust for risks (Burack et al., 1999; Hibbard et al., 2003; Casalino et al., 2007a, b; Werner and Asch, 2005; Chassin et al., 1996; Epstein, 1995; Matthes et al., 2010; Barr et al., 2004) and, more broadly, statistical, sample and comparison biases (Hofer et al., 1999; Epstein, 1995; Eisen and Dickey, 1996; Glance and Osler, 2001; Pandey et al., 2007). It should also be mentioned that actors do not always agree on the selected indicators, methodology and data sources (Mehrotra et al., 2003).

Many articles also make detailed examinations of issues related to the quality of performance measures, even though this is outside the scope of the present synthesis (Mor, 2005; Epstein, 1998; Morris and Zelmer, 2005; Badger, 1998; Casalino et al., 2007a;
Several approaches are suggested for dealing with these issues. Encouraging a transparent conceptual framework and methodology improves confidence in the quality of the knowledge (Baker et al., 2003; Putnam et al., 2006; Rowan et al., 2006; Epstein, 2006). Involving stakeholders in the implementation of the measurement system is also worthwhile (Mannion and Goddard, 2003; Bensimon et al., 2004; Rowan et al., 2006), particularly when it is part of a continuous and iterative improvement process (Mannion and Davies, 2002).

3.4 Knowledge dissemination process

3.4.1 Leadership. The articles reveal that a lack of leadership, both among the producers (Casalino et al., 2007b) and the users (Ginsburg, 2003) of the knowledge, acts to limit the success of interventions. They underscore the need for strong leadership at the national level as well as at the regional and local levels (Cheng and Thompson, 2006; Bricker et al., 2010; Duvalko et al., 2009; Schneider et al., 2004; Rangachari, 2008; Smith et al., 2001). In particular, leadership is expressed through active management of the intervention by the groups concerned and by experts in the measure, as well as in the dissemination of this type of knowledge (Marshall et al., 2000a, b). Various types of action by knowledge producers can enhance leadership: mobilizing influential actors in the targeted settings (Marshall et al., 2004), developing a plan for promoting the intervention’s objectives to potential users (Kanouse et al., 2004), offering active support or personalized assistance (Kissam et al., 2003; Chiu et al., 2007), organizing discussion and educational activities that include opportunities for feedback (Hickey et al., 2004), securing strong support from management in the settings concerned for quality improvement initiatives (Barr et al., 2006), and ensuring that senior managers play a proactive role in education and management (Rangachari, 2008).

3.4.2 Interactions. The concept of interactions refers to exchanges between the knowledge producers and other stakeholders. In this review, interactions are expressed through participation issues (collaboration, partnerships, involvement) and communication. Having actors participate or communicate is seen as a factor that fosters the design of content, format or processes that are well suited to potential users and their context (Kanouse et al., 2004; Mannion and Davies, 2002; Bensimon et al., 2004; Casalino et al., 2007b; Topol and Califf, 1994; Hickey et al., 2004; Tu and Cameron, 2003; Rowan et al., 2006; Hibbard et al., 2010). More specifically, articles underscored the importance of being able to collaborate on the definition of objectives (Marshall et al., 2000a, b) and targets (Centre for Health Services and Policy Research, 2004). Such interactions are found to have a positive influence on the perceived quality, credibility, legitimacy and utility of the information disseminated or the intervention in general (Epstein, 1998; Mannion and Goddard, 2003; Kissam et al., 2003; Mason and Street, 2006; Hickey et al., 2004; Rowan et al., 2006). They also appear to foster mutual learning and feedback (Hickey et al., 2004; Chiu et al., 2007), the trust and commitment of potential users (Mannion and Davies, 2002; Centre for Health Services and Policy Research, 2004; Casalino et al., 2007b; Barr et al., 2006; Baker et al., 2003; Rosenthal et al., 1997; Hibbard et al., 2010), and the intervention in general (Marshall et al., 2000a, b). The frequency of communications (Cheng et al., 2010) and direct relationships (Bensimon et al., 2004) are important in these interactions.
3.4.3 Support and continuity. In addition to interactions, activities and resources supporting the users must not be neglected (Bricker et al., 2010; Barr et al., 2008; Mukamel and Spector, 2003; Lin and Lin, 2008). Support ensures that the information is correctly interpreted (Mannion and Goddard, 2003) and understood in a comprehensive way (McNamara, 2006). Support encourages and guides users to apply the information well, in order to develop improvement strategies (Mukamel et al., 2007; Kissam et al., 2003) as part of deliberative, collective and intersectoral processes (Centre for Health Services and Policy Research, 2004).

3.4.4 Synchronization and routinization. Synchronization refers to the timely dissemination of information as required by the decision-making agenda, while routinization indicates dissemination that is repeated in time and through different channels. If it is difficult to provide the information in a timely manner (Epstein, 1995), or for the data to be understood due to a lack of time (Ginsburg, 2003), a balance will need to be established between the effort required to generate a valid measure and making knowledge available at the right time (Hickey et al., 2004). This requires a technological infrastructure that provides easy, fast, and continuous access to information (Cheng and Thompson, 2006; McNamara, 2006; Hamblin, 2007). The routinization of a dissemination process is also important (Brien et al., 2009; Barr et al., 2008; Glance et al., 2007). An organization will be more inclined to monitor changes in its performance if it knows that it will be evaluated again (Hibbard et al., 2003; McNamara, 2006), particularly if it has reported poor results in the past (Zinn et al., 2008). In addition, various modes of communication should be used, as this enhances the perception among managers that the knowledge is useful (Ginsburg, 2003).

3.4.5 Availability of resources. The intervention is based on activities and processes that require diverse resources. These may be financial, informational, technological or human resources, or may be expressed in terms of the time required. The great influence of these resources, from data collection to dissemination and use, is discussed in many articles (Kanouse et al., 2004; Ginsburg, 2003; Cheng and Thompson, 2006; Marshall et al., 2000a, b; Centre for Health Services and Policy Research, 2004; Leatherman and McCarthy, 1999; Schneider et al., 2004; Bensimon et al., 2004; Davies, 1998; McNamara, 2006; Spoeri and Ullman, 1997; Tu and Cameron, 2003; Green and Wintfeld, 1995). A lack of such resources may lead to the reassignment of existing resources within health facilities (Centre for Health Services and Policy Research, 2004; Pham et al., 2006; Davies, 1998), particularly in smaller organizations (Green and Wintfeld, 1995).

Many of the articles examine financial resources, shedding light on the need for an appropriate evaluation of the intervention’s direct and indirect costs. In addition to the costs to producers of infrastructure, administration (Leatherman and McCarthy, 1999) and dissemination (Kanouse et al., 2004; Marshall et al., 2000a, b), organizations incur costs collecting and analyzing data (Tu and Cameron, 2003). There are also costs associated with making the targeted users more willing to mobilize the knowledge and better able to use it in improvements (Centre for Health Services and Policy Research, 2004). It is therefore necessary to design cost-effective and practical interventions (Hickey et al., 2004) or plan efficient systems (Mannion and Davies, 2002). In addition, information and technological resources can be used to efficiently collect and manage data (Cheng and Thompson, 2006; McNamara, 2006; Tu and Cameron, 2003) and make dissemination more efficient (Bensimon et al., 2004) while fostering access to
information (Cheng and Thompson, 2006; McNamara, 2006). Attention also needs to be paid to the issue of human resources in terms of data collection within organizations (Green and Wintfeld, 1995), expertise in measuring and monitoring performance (Schneider et al., 2004), support in interpreting the data (Ginsburg, 2003), and the need to train qualified staff (Tu and Cameron, 2003). Finally, lack of time is a major barrier to the use of information in organizations (Ginsburg, 2003).

3.5 Knowledge utilization process

3.5.1 Understandability of the knowledge. The understandability of the disseminated information is an important issue (Mannion and Davies, 2002; Werner and Asch, 2005; Werner et al., 2008a, b; Poker et al., 2004). One study reports a relationship between the simplicity of reports and perceptions about their usefulness (Ginsburg, 2003).

Many aspects need to be considered in making knowledge understandable, including the content, format, and form of the communication (Mor, 2005; Marshall et al., 2000a, b; Hibbard et al., 2003, 2005; Werner and Asch, 2005; Hickey et al., 2004; Spoeri and Ullman, 1997; Schneider and Epstein, 1996; Robinowitz and Dudley, 2006; Felt-Lisk et al., 2007). More specifically, consideration should be given to: the number of categories or measurement items (Hickey et al., 2004; Glance and Osler, 2001), the standard of comparison (Glance and Osler, 2001), the stability of indicators and how they are defined (Hickey et al., 2004), proper identification of contexts (Hibbard et al., 2003; Hibbard et al., 2005), the visual support used to present the results (Jiang et al., 2001), and the equipment or platform to facilitate access and use (Marshall et al., 2003).

It could also be helpful for users to adapt the disseminated content or knowledge to their needs, which implies some flexibility in how it is assembled; this may be accomplished with a computer-based platform (Kanouse et al., 2004). Despite the inherent interest in having simple content, the content must also reflect the intrinsic complexity of the health system, as well as its performance (Centre for Health Services and Policy Research, 2004).

3.5.2 Transposability of the knowledge. Transposability, which refers to the nature of the knowledge that can be applied in a given context, is essential in encouraging action (Brien et al., 2009; Marshall et al., 2000a, b; Glance et al., 2007). Our analysis suggests that different aspects of the disseminated content can limit transposability: knowledge that is too general (Ginsburg, 2003), not contextualized (Epstein, 1995), or not comprehensive enough (Baker et al., 2002; Schneider and Epstein, 1996), and, more generally, poor alignment between the disseminated content and the information required for decision-making (Werner and Asch, 2005) or to initiate change (Tu and Cameron, 2003; Matthes et al., 2010). Another limitation results when users become confused about how to mobilize the knowledge (Baker et al., 2003). In this respect, the disseminated content needs to inform users about factors that caused or influenced the results (Leatherman and McCarthy, 1999; Baker et al., 2002; Tu and Cameron, 2003; Matthes et al., 2010). As mentioned above, information should be provided on processes since they are easier to modify than results (Matthes et al., 2010) and because this information will allow users to better define ways to make improvements (Baker et al., 2002). In addition, factors related to context and tacit knowledge need to be taken into account when transposing published knowledge (Davies and Lampel, 1998).
3.6 Incentives and feedback: interaction levers

3.6.1 Incentives. The concept of an incentive refers to all the means used to encourage potential users to commit to the intervention’s objectives and use the knowledge appropriately. Incentives need to direct users’ attention toward the information (Marshall et al., 2003) and encourage them to undertake improvements (Stewart and Greisler, 2002). In terms of the system’s governance context, incentives serve to align the intervention with the context in which it is deployed, whether this means reforms that encourage organizations to want to effect improvements (Zinn et al., 2008) or some other means of making the intervention part of strategies deployed throughout the health system (Stewart and Greisler, 2002; Marshall et al., 2003). For the purposes of this review, there are three types of incentives: recognition, rewards and obligation.

Several articles present incentives based on recognition in a favorable light (Badger, 1998; Hibbard et al., 2003; Davies, 2001; Pham et al., 2006; Davies and Lampel, 1998; Fung et al., 2008). Such incentives depend in part on potential users’ intrinsic motivation when they appeal to one’s professionalism (Davies and Lampel, 1998) and feelings of self-worth or are associated with approval from the public or of peers (Badger, 1998; Hibbard et al., 2003; Davies, 2001; Pham et al., 2006).

Incentives based on rewards are discussed in terms of examples such as pay for performance (Pham et al., 2006; Casalino et al., 2007a, b; Lindenauer et al., 2007; Werner et al., 2008a, b; McCormick et al., 2002) and sanctions for non-performance (McNamara, 2006; Hamblin, 2007). Such incentives are often seen in a favorable light (Pham et al., 2006; Casalino, 2007a, b; Werner et al., 2009), but other authors see limitations (Casalino et al., 2007a; Werner et al., 2008a, b; McCormick et al., 2002). Among other things, there is a risk of exacerbating disparities between organizations (McCormick et al., 2002) and driving less successful organizations into a downward spiral due to a lack of leverage (Mehrotra et al., 2003; Centre for Health Services and Policy Research, 2004; Marshall et al., 2003).

Finally, incentives in the form of obligations refer above all to contexts in which organizations had formerly participated in the intervention on a voluntary basis. Even though mandatory participation has both advantages and disadvantages (Morris and Zelmer, 2005), it is often seen in a favorable light (Epstein, 1998; Mannion and Davies, 2002; Marshall et al., 2003; Werner and Asch, 2005; Epstein, 1995; Barr et al., 2006; Chiu et al., 2007; Baker et al., 2003; Thompson et al., 2003; Epstein, 2000). For some authors, an obligation is inevitable, given changes to the context (Epstein, 1995, 1998; Baker et al., 2003; Averill, 1998) or in order to ensure that the intervention succeeds (Marshall et al., 2003; Werner and Asch, 2005; Thompson et al., 2003; Epstein, 2000). Participation can be required essentially through legal means or by regulation (Barr et al., 2006; Chiu et al., 2007).

In summary, it is important to ensure that the various incentives are complementary so that they will work together in support of a successful intervention (Marshall et al., 2004; Mehrotra et al., 2003; Centre for Health Services and Policy Research, 2004; Marshall et al., 2003; Mannion and Goddard, 2003).

3.6.2 Feedback. Feedback refers to evaluation and adjustment capacity in the context of an intervention. Several articles mention the importance of feedback (Kanouse et al., 2004; Mannion and Davies, 2002; Marshall et al., 2000a, b; Centre for Health Services and Policy Research, 2004; Mannion and Goddard, 2003; Casalino et al., 2007a; Davies, 1998; Epstein, 1995), which involves learning from the intervention and
making the appropriate adjustments in response (Centre for Health Services and Policy Research, 2004; Epstein, 1995), in particular by re-evaluating and prioritizing the intervention’s objectives (Kanouse et al., 2004). Feedback also encourages continuous improvement (Centre for Health Services and Policy Research, 2004), with actors reacting to the results obtained and suggesting improvements (Cheng and Thompson, 2006; Hickey et al., 2004). In fact, the evaluated organizations need to deal with results proactively. Certain approaches appear to be particularly effective: cross-disciplinary and cross-sector representation on work teams (Badger, 1998; Hickey et al., 2004), the active involvement of stakeholders who share responsibility (Cheng and Thompson, 2006), discussion and educational activities provided in small groups (Hickey et al., 2004), and focusing on improvements rather than blame (Cheng and Thompson, 2006).

4. Discussion
This review confirms the heterogeneous nature of the dissemination of performance information in healthcare systems. Additionally, it shows that the literature on the dissemination of performance information is generally not strictly focused on use at the organizational level. Still, we were able to identify various effective processes involved in those interventions. A framework, derived from KTE research, was used to classify and analyze the articles, and it proved operationally valid. The study produced the following three major findings.

First, dissemination in itself is not enough to produce improvement initiatives. The results confirm that the success of an intervention depends on a group of interrelated factors. These factors are related to the context of governance in which the intervention is deployed, the organizational context of the potential users, the nature of the knowledge, and the processes and incentives through which use is encouraged and supported. Should these factors not be taken into account in a systematic way, dissemination may prove useless and lead to undesirable consequences.

Second, this review confirms that the success of dissemination depends on coherence among these components. Among the issues revealed, the alignment of objectives with means (processes and resources) and the compatibility of means within the context of action are important. The review suggests that more coherence encourages commitment towards the intervention, use of information and even change. A lack of such coherence leads to distortions in processes and mechanisms, or creates tensions among the stakeholders.

These first findings therefore suggest developing a systemic view of the intervention by considering the many factors that can be used to influence the direction of actions. This involves giving due consideration to design and implementation choices, both upstream and downstream (selection of the system of measures or indicators, ways to involve or encourage actors, means of communication and support, etc.), with respect to the intervention’s goal, which is to improve the performance of health services. The intervention should also be well integrated into the governance context and be aligned with compatible management strategies and instruments.

Third, the review confirms that the conditions for supporting decisions or actions in health organizations are considerably different from those aimed at supporting decision-making by patients/consumers or their representatives. Previous authors had already mentioned the advantages of dissemination at the organizational level (Topol and Califf, 1994; Mebius, 1999; Glabman, 2005; Mohan et al., 2005; Schumacher, 2005;
Ferguson, 2006; Cooper, 2007). Going further, we observe that managers and clinicians are the direct and preferred beneficiary of performance information because of their unique position in the health system.

This being said, our review has corroborated some of the conclusions reached in prior reviews on public reporting of performance information. For example, Brown et al. (2005), Wallace et al. (2007) and Shekelle et al. (2008) had previously noted the need for a clear and explicit identification of objectives and strategies. Brown et al. (2005) highlighted the importance of placing the intervention in a context that will direct attention to the targets of improvement and support knowledge use and change. In a similar vein, the review by van der Veer et al. (2010) supports the idea that the dissemination of information should not be isolated; rather, it should be treated as one of a group of complementary strategies, all aimed at improvement. Their review also underscores the need to establish an organizational context that is favorable to the application of knowledge and to change. Fung et al. (2008) mention the importance of aligning various choices upstream and downstream from the intervention, meaning at the level of both the intervention’s design and implementation and how the information is used. As expressed in other terms by Morris and Zelmer (2005), the objectives need to be clarified for users and linked to them and their context in a coherent manner.

We went further by identifying essential factors to be considered for an effective intervention designed to generate and support continuous improvement in health organizations. First, the need for coherence requires understanding the organizational contexts in order to encourage actors to use the knowledge to this end. Our results suggest that organizations that value knowledge, learning, experimentation and innovation are more likely to succeed. In other words, organizations with supportive culture and structure for ongoing, evolving and cumulative knowledge-based changes are in a better position to act on the dissemination of performance information. Thus, attention needs to be placed on ways for encouraging such conditions in health organizations (Baker et al. 2008; van der Veer et al., 2010). This implies examination of the system’s various incentives and disincentives, including existing accountability and funding mechanisms (Brown et al., 2005). The change management literature provides a diversity of approaches, models and tools to specifically address the issues of organizational change (e.g. Iles and Sutherland, 2001).

Our results underline the importance of properly integrating the dissemination intervention into organizations. It is imperative to consider the organizational mechanisms, which create and maintain the interest and commitment of stakeholders, despite the obligations and pressures they face in their day-to-day work. For example, the intervention should be aligned with their usual ways of accessing and using information. In this regard, the quality, relevance, understandability, and transposability of the knowledge deserve careful consideration. Closely tied to the issue of relevance, transposability is fostered when the knowledge disseminated is aligned to users’ needs. This implies providing information that reflects realities in the field and the actors’ capacity for action. The challenge here is to generate appropriate knowledge for the users without losing sight of the intervention’s goal.

As previously suggested by Wallace et al. (2007), it is important to clarify the objectives and ensure that there is a shared understanding of the role that knowledge should play in decision-making or in the actions taken. In other words, agreement is needed on how the knowledge will be used. Thus the interactions between the
producers of knowledge and potential users play a key role. Our results support this idea of working closely with stakeholders to set objectives or by involving these actors as soon as development of the measurement system begins. As a result, there will be a better chance that the actors will share the objectives and take action; and that undesirable results will be limited. Overall, this study shows that their participation fosters relevant choices, particularly with respect to the content disseminated, as well as the sharing of ideas, understanding and mutual learning, user approval and, ultimately, knowledge use.

The support provided to potential users is also essential. Our results suggest the importance of developing user capacity to interpret the information and apply changes. Above all, a relationship of trust and collaboration needs to be established rather than an approach based on control or blame. Davies and Lampel (1998) suggest that “when the data are perceived as enhancing knowledge, not judgmental, and staff know that their motivations are not in doubt, then the culture is set for quality gains” (p. 160). The cooperation of clinical leaders or champions is also useful to promote the use of performance information in the organizational context.

Knowledge producers, including those disseminating knowledge, play a key role through their leadership and credibility. This leadership may be exercised in various ways: by promoting the intervention, by fostering the involvement of key actors, by disseminating knowledge, and by providing user support. Consideration should also be given to their credibility. In line with various authors (Schumacher, 2005; Chan et al., 2006; Iron, 2006; Pronovost et al., 2007), our results show the favorable influence that a central or independent actor, at the macro level of the health system, can exercise on the implementation of the intervention and the application of the information for continuous improvement. Marshall et al. (2004) report that the type of actor responsible for producing and promoting the intervention plays a significant role. If the actor is seen as serving a political agenda, the intervention may be poorly received.

Finally, the issue of incentives has not been fully resolved, but the results confirm a need for complementarity between obligation, rewards and recognition. Various incentives may lead users to become interested in the intervention and apply the knowledge in improvement initiatives, whether directly or indirectly, explicitly or implicitly. Generally speaking, the results suggest that it is preferable to use more than one incentive, ensure balance between the incentives used, and ensure that they are in line with the context of system governance. As Wallace et al. said: “In publicly funded systems, where competition is less apparent, incentives may have to take on different forms, such as increased governance autonomy for systems or providers with improved and high-quality performance” (Wallace et al., 2007, p. 5). The issue of incentives must therefore be addressed within the broader context in which governance is exercised.

5. Conclusion
In the past, considerable attention was paid to the public reporting of performance information, but since the results of this approach have been disappointing, consideration should be given to a more promising avenue. This type of knowledge may more directly and effectively support collective action at the organizational level. Moreover, developing dissemination initiatives in this way would appear to be more
appropriate in public health systems and services in which there is little competition to attract clients.

As previously indicated, the scope of the review was limited to the consideration of issues related to the dissemination of information and the latter’s utilization by users. Aspects such as the design of performance measurement systems or the process of improvement initiatives in health organizations are thus less directly covered by our review and will deserve more attention for further analysis. Furthermore, the strengths of the method used are to enable the integration of different types of evidence and the capacities to bring forth explanations. The method aims to allow for a broad selection of literature capable of generating theories that can guide the development of interventions. The rationale for this choice is not to negate the variation of study quality but rather to maintain a clear focus on a comprehensive understanding of the various factors affecting such an intervention. The quality of evidence thus lies in the external validity, meaning the accuracy of results and their conformity to the theoretical understanding of the phenomena. To ensure a rigorous approach in this respect, at least two researchers appraised all the studies included in the review process.

This narrative systematic review sheds some light on a series of processes associated with dissemination interventions designed to support continuous improvement in health organizations through the use of performance information. The results have practical relevance for health care systems where a legitimate actor or authority seeks to generate and support performance evaluation practices for ongoing, evolving and cumulative changes in health organizations. They show the need for a holistic approach when developing such interventions, with due consideration given to all the design and implementation alternatives and the shared goal, i.e. continuous improvements made to the performance of health services (see Appendix). The data suggest that the use of knowledge will remain marginal without coherence between the dissemination intervention, the governance context and the potential users’ context. One of the main challenges, which take a different form in each context, is to develop appropriate incentives that promote and encourage a collective commitment to this alternative paradigm of continuous performance improvement. The organizational change management perspective is of interest to deepen understanding of this question. Further, contextualized research should be carried out on appropriate incentives related to performance evaluation within the context of continuous improvement.

References


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**Further reading**


Appendix. Key messages for managers and decision-makers

1. The dissemination of information should be considered as carefully as the measurement of performance in order to ensure a successful intervention aiming at the continuous improvement of performance within health organizations. The two should not be dissociated from each other in practice.

2. Being attentive to dissemination goes beyond better communicating the generated information. Successful dissemination depends on various “external” realities, which influence the ways actors react to performance information such as the clarity of objectives, the relationships between stakeholders, the system’s governance, and the available incentives.

3. It is important to fully understand the environment as a whole (the governance system) and the intervention’s specific context (health organization). Above all, it is important to keep it in mind at all stages of development and implementation, whether when developing the measurement system, when defining the mobilization strategy or when planning the training or support resources.

4. Therefore, choices pertaining to resources and the intervention’s processes should be continuously prompted by the concern to support organizational action. They must help direct and maintain the organizations’ focus towards the expected purpose of the information’s use, which is improvement and not sanction. This involves being able to establish a trusting and working relationship with the potential users, and to move away from a controlled approach, which is generally characteristic of actions by public authorities when it comes to organizational performance.

5. The design of the intervention should begin with an analysis of the characteristics of the potential users’ contexts, so as to properly identify their capacities, constraints and needs in terms of performance evaluation.

6. The designers of the intervention must then use all means at their disposal to consider the possible needs and problems that will be identified in this preliminary analysis, such as organizational culture, resource allocation or the availability of professional skills.

7. The involvement of the potential users should begin right from the start since they can help determine the framework and identify the required resources and processes. Their upstream involvement will also favour a trusting and working relationship, which is required for a successful intervention.

8. The success of the intervention relies on its credibility. The potential users must trust the measurement system and the responsible authority. They should also trust their own capabilities in using the disseminated information in order to improve the performance of health services. Training and support are both essential at the start.

9. Finally, various incentives are required so that potential users become interested in the intervention itself, as well as in using the information so as to initiate improvement initiatives. The incentives’ effects are intimately linked to the overall environment and specific contexts in which they operate.

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