

EXPLORING THE DYNAMICS OF PHYSICIAN ENGAGEMENT AND LEADERSHIP FOR HEALTH SYSTEM IMPROVEMENT

PROSPECTS FOR CANADIAN HEALTHCARE SYSTEMS

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TABLE OF CONTENTS

KEY MESSAGES.....	1
EXECUTIVE SUMMARY.....	2
RESEARCH OBJECTIVES AND QUESTIONS	5
BACKGROUND AND DEFINITIONS	5
METHODS	8
RESULTS.....	8
I ► Impact of Health System Challenges and Evolution on Physician Engagement and Leadership.....	8
A. Health System Context and the Demand for Physician Engagement and Leadership.....	8
B. Main Messages (Health System Perspective)	10
II ► Organizational Dynamics of Physician Engagement and Leadership	10
A. Structural Dimensions.....	10
B. Supportive Process and Contextual Elements.....	14
C. Policy Implications From Research on the Organizational Dimensions of Physician Engagement and Leadership	21
D. Main Messages (Organizational Perspective).....	24
III ► Individual Determinants of Physician Engagement and Leadership.....	24
A. Skills and Competencies Development.....	24
B. Development and Dilemmas of Physician Leadership Roles and Identities..	29
C. Policy Implications From Research on Individual Determinants of Physician Engagement and Leadership.....	33
D. Main Messages (Individual Perspective).....	34
LESSONS LEARNED FOR PHYSICIAN ENGAGEMENT AND LEADERSHIP IN HEALTH SYSTEM IMPROVEMENT.....	35
CONCLUSIONS	37
REFERENCES.....	38
<i>APPENDIX 1: DETAILED METHODOLOGY.....</i>	<i>50</i>
<i>APPENDIX 2: NATURE OF THE EVIDENCE</i>	<i>53</i>

KEY MESSAGES

- Physician leadership and physician engagement are essential elements of high-performing healthcare systems, contributing to higher scores on many quality indicators. Likewise, physician participation in hospital governance can improve quality and safety.
- Although much of the literature on healthcare reforms suggests the importance of physician engagement and leadership, this literature is less explicit about the processes by which health systems and organizations can convert physicians' autonomy, knowledge and power into resources for health system performance and improvement.
- Physician leadership is important at the apex of the organization, but leadership occurs at all levels of the system. Increasing attention is being paid to high-performing clinical microsystems as well as new leadership modalities (e.g. dyads of physician and manager leaders and other forms of distributed leadership) and processes (e.g. physician "compacts") that are fostering what some refer to as "organized professionalism."
- Physician engagement does not happen on its own. Organizations must use diverse strategies and initiatives to strengthen physician engagement and leadership, including (but not limited to):
 - *physician compacts* as mechanisms that help clarify roles, expectations and accountabilities between physicians and other system leaders
 - *leadership that is linked to broader improvement strategies* to create a receptive context for physician engagement in improving clinical outcomes
 - *leadership development*—especially for collective and distributive leadership—to support physician engagement
 - *teams and team leadership*—especially inclusive leadership—as a favourable context for physician engagement and leadership and performance improvement
- A key variable for success in these approaches to physician involvement is trust between physicians and organizations, which can develop around these elements: open communication, willingness to share relevant data, creating a shared vision and accumulating evidence of successful collaboration.
- True physician engagement and leadership begins with understanding and addressing the underlying characteristics and values of the engaged physicians.
- Organizationally, physician engagement depends on a mosaic of factors and can therefore be difficult to achieve. Physician leaders may experience obstacles in assuming leadership roles in organizations and systems. Such obstacles may be partly attenuated with purposeful changes to shape the organizational culture (called "cultural work").
- Successful strategies to engage physicians need to go beyond, but not ignore, appeals to their economic motives. In the same vein, formalized strategic leadership positions are important but are insufficient to effect high performance. Because of the major "cultural problems" posed by management–professional tensions, economic and symbolic solutions do not necessarily translate into greater physician engagement. The main challenge is to bridge and integrate cultures, not buy commitment.
- Developing physicians' skills and competencies to support improvements in health systems means targeting a full range of physicians rather than only individual physicians. Key core competencies for engaging and fostering physician leadership include leadership, strategic planning, "systems thinking," change management, project management, persuasive communication and team building.

EXECUTIVE SUMMARY

The purpose of this literature review was to synthesize the existing knowledge regarding physician engagement and leadership and to identify key recommendations to enhance physician leadership skills, physician alignment with other components of the healthcare system, and the capacity to foster and improve the accountability of physicians for improved organizational and system performance.

Demands for increased performance and accountability in healthcare arise from increasing expectations for improved service and higher standards of care by patients, the public, government and policy-makers. In response to these pressures, leaders in regional and provincial healthcare systems in Canada and other countries increasingly focus on system changes that improve performance and accountability and that enhance patient experiences while containing costs. The broad system changes required for such improvements rely on aligning healthcare providers with organizational and system aims and activities and, in particular, engaging physicians and the medical profession in both setting the course for system change and ensuring optimal execution of the desired system changes. Consequently, there have been increasing numbers of physicians in formal leadership roles and increased expectations regarding the roles they can play in improving health systems.

Mobilizing physicians in formal leadership roles and formal decision-making or governance bodies is important but cannot by itself respond to these expectations for greater physician engagement. However, recent research focused on developing more effective practice settings (for example, high-performing clinical microsystems) suggests that structure *can* play an important role in generating physician engagement and in actualizing physician leadership. It also suggests that engaging the medical profession and developing its leadership cannot be limited to initiatives located at the strategic apex of the organization or system. The growing attention paid to team-based organizations and “teamness” exemplifies this argument. Similarly, the greater interest in high-performing clinical units, or clinical management systems, shows that structures creating greater alignment for improvement, accountability and cost containment may represent fertile ground for developing physician engagement and leadership. Nevertheless, physicians need to be properly compensated for their time and involvement in team and improvement initiatives. Trust between the organization and physicians appears fundamental to aligning physicians’ and organizational goals.

A clear lesson from this review is that structural work (physicians in formal executive positions, development and management of information for clinical performance, economic incentives, etc.) is insufficient for developing physician engagement and leadership at scale. More elaborate processes of engagement and leadership development at the individual, organizational and system levels may be needed to support physician involvement in system improvement.

Research on general leadership and on physician leadership for health system improvement points toward an important new view of leadership that is more collective, distributed and relational. This concept blurs to a certain extent the distinction between engagement and leadership per se, suggesting the need to develop more active roles for physicians in improvement initiatives. Developing clinical leaders and champions across systems can make a significant contribution to improvement. This approach to leadership is consistent with recent work on using a social movement approach to improving health systems and with approaches

promoted by the Institute for Healthcare Improvement in the United States. The core idea is to spread leadership by developing group norms that support continuous improvement.

One challenge is how to develop these norms of engagement. From this review, it appears that efforts to develop new skills and competencies by training individual physicians for leadership roles, including exposing them to interprofessional experiences and cultivating dyads of physicians and managers in charge of clinical units, may support the emergence of such norms. Broadening this concept, the review illustrates emerging roles in some jurisdictions where physicians work in partnership with decision-makers, or directly fill policy, strategy and funding roles, in conjunction with maintaining a clinical focus. To some extent, better recognition of physician leadership roles for system improvement can potentially support the reframing of norms and relationships between the medical profession and the system or organization. For example, using physician compacts to reframe the relations between the medical profession and the organization is one potential strategy that has been applied in Canadian and American contexts.

However, the review suggests that greater involvement of physicians implies changes not only for the medical profession. Health systems are structured and developed around well-embedded policy and managerial logics that have fuelled a more or less distant and controversial relationship with the medical profession. Within organizations and health systems, greater physician leadership and physician engagement also require changes in the way managers and policy-makers interact and work with physicians. A focus on health system improvement probably suggests a new *modus operandi* between the system, the organization and the profession. This idea is captured somewhat in the recently developed notion of *organized professionalism*, which means that professions and organizations must mutually accommodate system changes and evolution.

This synthesis also underscores the important dilemmas that physician leaders experience in assuming new roles in organizations and systems. Such dilemmas may be partly attenuated by getting involved in *cultural work*. Cultural work implies the promotion of a new discourse at the individual level around the incorporation of organizational and system thinking as part of the “knowledge” that physicians have to incorporate in their professional “know-how.” Such incorporation will of course be performed to various degrees depending on the propensity and involvement of physicians to assume leadership roles that go beyond the usual clinical responsibilities. At more system or organizational levels, some researchers have suggested that a cultural shift toward considering physicians as workers among workers may help in developing new norms of engagement and new leadership roles.

This shift is probably one of the biggest challenges for health systems. The exact meaning of such a cultural shift is still to be defined and will probably vary from organization to organization and system to system. The idea behind cultural work is that professional status and autonomy must likely be rethought to support more widespread engagement and leadership of the medical profession for health system improvement. Again, this goes back to the notion of organized professionalism and to the importance of identifying strategies that simultaneously encourage the inclusion of physicians as leaders in organizations and their genuine participation in improvement initiatives. At the same time, organizations and systems may have to pay more attention to the positive experiences that physicians have in their day-to-day work in organizations.

The literature reviewed in this synthesis reveals growing knowledge about the dynamics of physician engagement and leadership for health system improvement. Overall, the review suggests that diverse strategies and initiatives can be developed to strengthen physician engagement and leadership in Canadian health systems. These strategies must focus on developing capacities at the individual, organizational and system levels. The recognition of the importance of process elements (cultural and relational work, including the nurturing of a more collective view of physician leadership) implies that, to achieve the maximum benefits of any structural changes (such as financial incentives, the design of formal leadership positions, new committee structures, etc.), increased investment in cultural and relational work will also be necessary to support engagement and leadership.

Finally, the review indicates that physician leadership and physician engagement are probably part of a continuum and are mutually reinforced at the individual, organizational and system levels. Greater expectations of more active leadership by the medical profession for health system improvement will support the engagement of larger numbers of physicians in organizational and system affairs. More physician engagement will probably support the development of formal and informal medical leadership for improvement across health systems. These investments may partly alleviate the barriers to physician engagement and leadership and the tensions in developing new roles for the medical profession.

Some gaps exist in current knowledge. More empirical studies are needed on the process and practices used by organizations and systems to engage physicians and to develop physician leadership for health system transformation and improvement. In particular, such research needs to focus on how the specific structural changes and leadership training efforts made in different contexts actually link to strategies to develop facilitative environments for physician engagement and leadership. In addition, more research aiming to learn from organizations that have succeeded in creating effective physician leadership and engaging front-line physicians would provide a better understanding of appropriate and successful strategies. A broader assessment of leadership competencies and the means to foster these competencies (through both formal education programs and practice-based learning) also would be helpful.

RESEARCH OBJECTIVES AND QUESTIONS

The purpose of this expedited synthesis was to synthesize the existing knowledge regarding physician engagement and leadership and to identify key recommendations to enhance physician leadership skills, physician alignment with other components of the healthcare system, and the capacity to foster and improve the accountability of physicians for improved organizational and system performance. We included these specific research objectives:

- to synthesize the identified literature to determine potential levers for, and barriers to, improving physicians' accountability to the healthcare system
- to elaborate an integrated framework of factors and processes that influence physician leadership and engagement for health systems and organizational performance
- to synthesize the gathered information to identify policies to develop and support physician leadership and engagement in improvement initiatives within healthcare organizations and systems
- to identify gaps in current knowledge for future research

Two research questions also formed the basis of this review:

- What are effective levers (including remuneration schemes) for engaging physicians and forging an accountability relationship for healthcare system performance, the health outcomes of their patients and the general population, and the costs of healthcare?
- How can the influence of physicians be harnessed for leadership around quality improvement, organizational change and transformation?

BACKGROUND AND DEFINITIONS

Demands for increased performance and accountability in healthcare arise from increasing expectations for improved service and higher standards of care by patients, the public, government and policy-makers (Merry, 1993; Porter & Teisberg, 2007; Singer & Shortell, 2011). In response to these pressures, leaders in regional and provincial healthcare systems in Canada and other countries increasingly focus on system changes that improve performance and accountability and that enhance patient experiences while containing costs. Physicians' leadership and their engagement are seen as critical to achieving these improvements. The broad system changes required for such improvements rely on aligning healthcare providers with organizational and system aims and activities and, in particular, engaging physicians and the medical profession in both setting the course for system change and ensuring optimal execution of the desired system changes (Darzi, 2008; Department of Health, 2010; Devlin & Appleby, 2010; Dwyer, 2010; Ham et al., 2010; Singer & Shortell, 2011).

Traditionally, medical training has emphasized clinical autonomy and professional allegiance over organizational and system values (Gillam, 2011). Physician leadership was seen to be important in the realm of clinical matters, as an input to organizational management and decision-making within a "command and control" system. More recently, many have viewed physician leadership and engagement as critical contributors to improving healthcare. This view is highlighted by the experience of high-performing healthcare systems where strong physician leadership and engagement are important elements contributing to their performance.

The general concept of leadership has also continued to evolve, with leadership no longer understood to be restricted to those in designated roles. Instead, leadership and engagement are increasingly understood to be more distributed in nature and as critical at all levels, from individuals to teams, organizations and systems. New approaches to leadership are emerging, together with concepts of “shared” or “collective” leadership (see the NHS Leadership Academy, for example: <http://www.leadershipacademy.nhs.uk/discover/leadership-framework/>; see also the LEADS Framework developed in the Canadian context: <http://www.leadersforlife.ca/leads-framework>). This evolving understanding has blurred our understanding of physician leadership and physician engagement, making the study of these topics challenging.

Taking a broad look at the prospects for the involvement (engagement and leadership) of physicians for health system improvement, Noordegraaf (2011) recently suggested that the traditional dichotomy between professionalism and organizations is no longer a valid reflection of contemporary professions and organizations. Instead, a series of factors pushes the professions, including the medical profession, to develop organizational capacities and to get involved in organizational matters. In the case of medicine, Noordegraaf gives examples of the increasing complexity of care (mental health, multi-chronic morbidity, etc.) that forces the transcendence of traditional boundaries (between professions and organizations) in healthcare and the growing recognition that professionals need well-developed organizational environments to support their practice. According to Noordegraaf, we are seeing the emergence of “organized professionalism,” where organizations no longer merely represent constraints from the perspective of professionals and where the relations between organizations and professionals are no longer characterized mostly by transactional relations based on economic motives.

Although this may be the emerging reality, we know that health systems still struggle for increased physician involvement in organizational and system issues. One way to respond to this challenge is to better understand how to support physician engagement and leadership for health system improvement. In this study, we will explore two dimensions of physician involvement for health system improvement: physician engagement and physician leadership. We conceive of engagement and leadership as distinct constructs but also as complementary aspects of increased physician involvement around organizational and system issues.

Based on research on organizational behaviour, engagement in a role “refers to one’s psychological presence in or focus on role activities and may be an important ingredient for effective role performance” (Dickson, 2012; Rothbard, 2001: 656). Beyond the investment that someone puts in a role, engagement can be seen as resulting from the interactions between the medical and the organizational worlds (Dickson, 2012; Kaissi, 2012; Spurgeon, Mazelan, & Barwell, 2011). Ideally, such interactions can support the development of collaborative relationships and joint accountability between these two worlds for health system improvement.

Engagement is also considered distinct from identification with a role and commitment to a role. Again according to Rothbard (2001: 657), identification “represents the importance or salience of a role to an individual ..., whereas commitment represents the individual’s attachment to a role Identification and commitment represent reasons why one might become psychologically present (i.e., engaged) in a role.” Whereas Rothbard’s concept of engagement focuses mostly on individual behaviours and motives in work settings, Bate, Bevan and Robert (2004) have taken a more collective approach to engagement based on work on social movements, where the challenge consists in creating a critical mass of agents of change and improvement in a given

healthcare system. The implication of this approach for our review is that, beyond strategies to engage physicians *individually* in new roles, there is room to develop a more *collective* approach to mobilize physicians as a group for improvement (Horne, 2012).

For this report, we will look at various strategies that may stimulate the engagement of physicians individually and collectively in roles that go beyond their usual clinical responsibilities for individual patients in order to support health system improvement. Such an approach is consistent with recent work by Clarke and colleagues on physician engagement in the United Kingdom's National Health Service (NHS):

[Physician engagement] is not only about the appointment of a small group of leaders to roles such as medical or clinical director. It is recognition that leadership is a social function and not just defined by hierarchical reporting lines. Enhanced medical engagement should work towards a model of diffused leadership, where influence is exercised across relationships, systems and cultures. It should apply to all rather than a few (Clark, Spurgeon, & Hamilton, 2008:5).

Another key construct at the basis of our review is leadership. Leadership has been defined traditionally as a capacity of individuals in formal positions to influence the orientations of an organization or a group (Bennis & Nanus, 1985; Stogdill, 1948). The image of the charismatic leader well represents this concept of leadership as something demonstrated by exceptional individuals who make a difference in their environment. Although this representation of leadership may be valuable, it is also too restrictive and may not reflect the reality of leadership in health systems and organizations. As suggested above, the idea that leadership may also be collective, shared, distributed or, more generally, plural (Denis, Langley, & Sergi, 2012; see also Currie, Lockett, & Suhomlinova, 2009, for a critical analysis of this concept) is gaining in popularity.

For the purpose of this review, leadership consists of individual, collective and distributed efforts to engage physicians in improvement initiatives within healthcare organizations and health systems (Hartley & Bennington, 2011). Leadership is necessary for broader physician engagement, whereas engagement refers to the active interest and participation of physicians in organizational and system change and improvement activities. However, many authors note that physicians are poorly prepared to take leadership roles in organizations and systems (Berwick & Nolan, 1998; Clark et al., 2008; Collins-Nakai, 2006; Dickson et al., 2009). As a result, there is growing emphasis on ensuring that physicians are well equipped with the knowledge, skills, attitudes and values needed to play system leadership roles (Beeson, 2009; O'Hare & Kudrle, 2007).

Our report will deal with the challenges and strategies around physician engagement and physician leadership for health system improvement.

METHODS

Our synthesis of the existing knowledge regarding physician engagement and leadership involved several phases, which are outlined in detail in Appendix 1. Computer searching identified possibly relevant literature published between 1990 and 2012 using six initial domains of inquiry. Following a preliminary analysis of the literature, the list of domains of inquiry was refined and expanded to eight domains.

For the final review the research team selected 202 papers that were rated independently as relevant by two members. These papers covered the eight revised domains of inquiry: high-performing healthcare organizations; quality and safety of care/quality improvement; skills and competencies development for physician leadership; patient-centred care; health system reform/transformation; physician roles, identity and role conflicts; physicians in organizations (including accountable care organizations); and team effectiveness.

RESULTS

In Appendix 2, we provide detailed summaries of the nature of the evidence we reviewed for each major section of the Results.

I ► IMPACT OF HEALTH SYSTEM CHALLENGES AND EVOLUTION ON PHYSICIAN ENGAGEMENT AND LEADERSHIP

A. Health System Context and the Demand for Physician Engagement and Leadership

The articles in this section examine the reactions or behaviours of physicians within the context of healthcare reforms. Through case studies or exploratory interviews, a subset of the papers documents physicians' perceptions of the implementation of reforms in Sweden, the United Kingdom and the Netherlands (Engstrom & Axelsson, 2010; Ong & Schepers, 1998; Quaye, 1997). The studies in this subset suggest that physicians are not necessarily opposed to the reforms (internal markets, for example) but that their reactions are shaped by the process that drives the reform implementation.

When physicians develop or maintain a high level of trust during a period of change, they can be positive participants. However, physicians are not a homogeneous group and may express different reactions and levels of involvement with reforms. Ong and Schepers (1998) observe the important role of power and the types of structures that are put in place to engage physicians. Informal relationships with physicians may help to convert their potential opposition to reform into a more positive force. In addition, the types of committees and consultations also appear to be important. Committee structure and the consultation process can help physician groups to view the benefits of reform for the system, not only for their own practice.

Paulus, Davis and Steele (2008) provide a narrative of the Geisenger Health System in the United States and its "Proven Care Model." The transformation and the performance of this system rely strongly on provider-initiated change or collaborative initiatives between providers and payees. This suggests that engagement can be fostered where supportive information technology and incentives exist, where physicians participate in the design of key system features, and where there are clear performance or improvement targets. This type of experience is also part of recent discussions of effective clinical management systems that feature strong

physician leadership in a supportive context, and clear goals and incentives (see Bohmer, 2012, for example; see also a description of the transformation journey of a US healthcare system in McCutcheon, 2009 and a review of this material in Baker et al., 2012).

A series of essays of varying analytical depth (Clark, 2012; Fulop & Day, 2010; Gilmore, 2010; Kirkpatrick et al., 2012; Schneller et al., 1997; Souba, 1996) provide some useful insights into how physicians relate to transformation and reforms. Souba (1996) examines the corporatization of medicine in the United States, while Schneller et al. (1997) suggest that the role of physician leaders in this context goes beyond representing medical staff and buffering the conflicts between management and doctors. Schneller and colleagues consider physician leaders or executives as having a broad set of functions in a new medical division of labour (building on earlier work by Friedson [1985] on the segmentation of the medical profession). In this context, it becomes more and more difficult for physician leaders to see their primary role as defending the interests of their professions. In the same vein, Fulop and Day (2010) propose that leadership development programs for physicians are generally based on individualistic assumptions and approaches to leadership that limit the development of physician leadership for health system improvement. Behind these papers are broader ideas regarding the evolution of the health system and its institutional foundations. These changes have helped shape the varying capacity of health system leaders to mobilize the medical profession in management and leadership roles (Kirkpatrick et al., 2012).

In a review of the experience of clinical leadership within the NHS, Edmonstone (2009) suggests that the vision of control prevalent within the system is still largely managerial and hierarchical, thus limiting the development of physician leadership. From a US viewpoint, authors like Porter and Teisberg (2007) and Singer and Shortell (2011) have paid attention to elements of competition and accountability (Kocher & Sahni, 2010) that may open new opportunities for physician leadership and engagement in improvement. Similar perspectives are found in a series of normative papers voicing the needs of the medical profession in health systems and the need for greater physician involvement for healthcare improvement and performance (Dye, 1996; LeTourneau & Fleischauer, 1999; Puckett, 1998). Although these papers may bring some useful experiential insights, they focus more on prescriptions than close examination of current practice.

Fundamentally (and more theoretically), developing physician engagement and leadership for improvement implies a more elaborate reconciliation of three broad and distinct institutional logics: professional, organizational and policy logics (Lounsbury, 2007). Professional logic is based on the principles of self-regulation and individual clinical autonomy in order to guarantee clinical quality. Autonomy is exercised in the context of accountability to one's patients and one's peers (Salter, 2001). Organizational, or managerial, logic is based on the idea that it is possible to improve the functioning of healthcare systems by giving greater importance to management practices and incentives that include mechanisms of accountability, objective setting and continuous improvement (Ferlie et al., 1996). Policy logic refers to broad guidance (including governance and regulation) within the environment of a given health system.

Institutional logics provide the organizing principles for a given sector or field (Friedland & Alford, 1991). Understanding the nature of these underlying institutional logics helps to explain the challenge of physician engagement and leadership in improvement. Developing physician engagement and leadership involves moving away from an established status quo, a status quo based on a specific articulation and ranking of the institutional logics (Reay & Hinings, 2009).

For example, Tuohy (1999) suggests that the fundamental social contract between the medical profession and the Canadian healthcare system may be seen as limiting full involvement of the medical profession in resolving organizational and system issues.

Some empirical studies and commentaries have focused on the compatibility between professional logic and organizational (or managerial) logic dating back to the 1950s and including studies on patterns of identification among different professional groups (Gouldner, 1957). More recent work has paid attention to the accommodation of these two logics in knowledge-based and professional organizations (Kitchener, Caronna, & Shortell, 2005; Quinn, 1992). Medical and other healthcare professionals face increased pressures to work within and become more involved in formal organizational settings (Friedson, 1985; McKinlay & Arches, 1985; Starr, 1992). Research on the impact of organizational contexts on professional status and practices (Adler, Kwon, & Heckscher, 2008; Exworthy et al., 2003; Kitchener et al., 2005; Macintosh, Beach, & Martin, 2012) indicates that the medical profession has adapted quite well to practice within more formal organizational contexts, in part because medical professionals were in a position to renegotiate mechanisms of self-regulation and to mediate the demands of healthcare organizations and systems and ongoing professional aspirations.

Although these studies recognize the processes of accommodation between the medical profession and organizations, they do not provide insights into how to convert such accommodation into resources for health system improvement. Health systems are structured around various logics (professional, managerial and political) that do not converge naturally. Strategies to engage physicians and to develop their leadership for health system improvement will necessarily imply a redefinition of these logics and of their interrelations. In other words, *organized professionalism*, as defined in the introduction of this report, may not have developed sufficiently in healthcare systems despite factors that promote such changes.

B. Main Messages (Health System Perspective)

- The incorporation of physicians into organizational structures is a necessary step; however, it is insufficient on its own for engaging physicians in the redesign of healthcare processes and systems.
- The literature on the impact of healthcare reforms on physician engagement and leadership suggests a need to explain the process by which health systems and organizations can convert physicians' autonomy, knowledge and power into resources for health system performance and improvement.
- We also need more knowledge about the design and implementation of strategies and levers to initiate and support physician leadership and engagement.

The next section of the Results will focus on organizational structures and processes that may support the development of physician engagement and leadership.

II ► ORGANIZATIONAL DYNAMICS OF PHYSICIAN ENGAGEMENT AND LEADERSHIP

A. Structural Dimensions

A first stream of work in studies of organizational dynamics includes many papers dealing with structural determinants of physician engagement and leadership based on numerous empirical

studies of hospitals and hospital systems within the US healthcare system. The leading theme behind this literature is that formal organizational positions and contexts (including the creation of formal executive positions for physicians, economic incentives to align physician interests with organizational or system interests and organizational structures to better integrate physicians) do have an impact on physician engagement and leadership (Alexander et al., 2001; Burns & Muller, 2008; Dickson, 2012; Metrics@Work, Grimes, & Swettenham, 2012; MSEQWG, 2012; Robinson, 1997; Shortell et al., 2000). These studies represent a solid body of empirical work on a range of organizational structures and systems (integrated delivery systems, contracts with large group practices, etc.) to support closer linkages between physicians and organizations.

A recent report by Denis and colleagues (2011) reviews various design options used by hospitals to more formally integrate physicians within the governance and management of the institutions. Among other examples, the authors review the structural characteristics of some American systems or organizations, such as the Johns Hopkins Hospital, Kaiser Permanente, Mayo Clinic and Intermountain Healthcare. The authors conclude that dyads of physician-manager leadership structures are found at all decision levels across the organization and that strong engagement of physicians also seems to rely on strong economic integration and a strong commitment to view quality of care as the core strategy of the organization, supported by well-developed information technology and the engagement of all stakeholders within the organization (Denis et al., 2011; see also Dickson, Tholl, & PHSI Partners, 2012).

An extensive review of hospital–physician collaboration by Burns and Muller (2008) finds only weak evidence supporting the impact of various models of economic integration used to link physicians with their organizations. These authors’ findings suggest the need for a diverse set of organizational strategies to support better alignment of the medical professional, organizational and system goals. A critical insight from this work is that successful strategies to engage physicians need to go beyond appeal to the economic motives of physicians.

In fact, views on how physician leadership should be structured have evolved over time. Looking at the current situation from a UK perspective, Clark (2012) sees medical leadership “at the core of health reforms in a number of different countries” that see quality, patient safety and value as resting on the active engagement of doctors. Medical engagement is an important strategy for health system reform. Spurgeon et al. (2011) report that higher levels of engagement generate greater positive affect and that this, in turn, leads to improved work performance. In the NHS medical engagement is seen as crucial for planning and implementing service improvements. Hybrid leadership structures that create physician leadership roles alongside other managers are considered a step forward in integrating clinical and non-clinical leadership, but such structures vary considerably across sites and are likely insufficient mechanisms.

Epstein and Bard (2008) report on interviews with clinical and executive personnel in 14 programs in US academic health centres that were considering or had established heart or cancer service lines, finding great variation in the expectations for service line leaders. The matrix structure used in most academic health science centres limits the leaders’ authority over necessary resources, and departmental or division heads (clinical departments or units) did not like the new service lines, which they perceived as taking power away from them. According to Epstein and Bard (2008), these leaders needed to use their authority over research resources to influence recruitment and appointments because they lacked direct control in these areas.

One of the key findings from this research on structural determinants of physician engagement has been a typology of structural arrangements in healthcare that are more or less supportive of physician integration. Within an integrated model, structural conditions like developing formal executive positions for physicians and committees for joint decision-making support physicians' engagement (MSEQWG, 2012).

Inspired by the work of Hirschman (1970) on exit, voice and loyalty, Burns, Andersen and Shortell (1989) made an important distinction between mechanisms for inclusion, which may be limited to contractual arrangements, and mechanisms for participation, which aim at more joint decision-making between physicians as a group and the organization. Underlying this distinction is an assumption that the relative power of individual physicians and of the medical profession as a group is affected by the types of structural arrangements that become prevalent in a given system ("corporatization" of medicine being one example of such structural arrangements). Results from a survey conducted by Burns et al. (1989: 579) more than 20 years ago conclude:

Our results indicate that investor-owned hospitals and hospitals in systems show no signs of moving to control the behavior of physicians practicing within their walls. On the contrary, hospitals in for-profit settings appear to promote physician exit and voice. Physicians who practice in these settings report the lowest level of inclusion and dependence on the primary hospital, and the greatest involvement in hospital governance.

These results are of particular interest because they suggest a situation where physicians are highly involved in decision-making and governance without being formally or strongly integrated within the organization or system or in a manner that makes them feel part of the organization and jointly accountable for its results and performance.

A second stream of work in the realm of structural dimensions has focused specifically on the impact of having physicians in formal executive positions. There is growing recognition of the importance of physicians to effective health organizations and health system leadership. Nearly 20 years ago Dunham, Kindig and Schultz (1994) carried out a survey of US physician executives and other executives that indicates the importance of physician executive contributions to organizational performance in all types of healthcare organizations. Physicians in particular were seen as improving quality assurance activities, having effective relationships with medical staff and evaluating practice patterns to improve efficiency (MSEQWG, 2012). These areas are seen as important for the future.

Baker and Denis (2011) observed that initial efforts toward physician leadership involved the creation of formal (structural) positions for physician executives. In the context of the NHS in the United Kingdom, some observers saw little change in the traditional view of clinical autonomy following the creation of positions of clinical directors. Furthermore, it appears that physician executives' ability to implement sustainable improvements (quality of care, efficiency) were limited (Ferlie et al., 1996; Fitzgerald et al., 2006; Marnoch, 1996). Studies by Goes and Zhan (1995) in the 1980s and a recent survey of US hospitals by Goodall (2011) conclude that the use of structural mechanisms (physicians as chief executive officer, physicians on joint decision-making committees, etc.) to favour physician integration can have a positive impact on the financial and organizational performance of hospitals or the quality of services provided. And hospitals where clinicians are engaged in strategic planning and decision-making perform better than hospitals where clinical personnel are not engaged (Goldstein & Ward, 2004). Spurgeon et

al. (2011) also report on the results of UK surveys of physician engagement using the Medical Engagement Scale. He and his co-authors note that higher medical engagement in hospitals is associated with higher scores on many quality indicators.

O'Sullivan and McKimm (2011) report on two systems of medical leadership that are held up as exemplars of excellence: the Danish healthcare system and Kaiser Permanente in the United States. The Danish system requires a doctor on the management board of every hospital. Clinicians dominate leadership and management positions, and Denmark has set up a comprehensive leadership framework based on the Canadian CanMEDS framework. Kaiser Permanente has several important leadership practices, including joint leadership between management and clinicians; alignment of mission, strategy and operational goals that reduce conflicting incentives; and a well-developed management training program for physicians.

A model of shared leadership is also at the basis of the Medical Leadership Competency Framework in the United Kingdom (NHS Institute & AoMRC, 2010). Referring to the UK situation, Clark (2012) sees the NHS as moving from a model of general management supported by medical representatives "to one of greater distributed leadership with many doctors at all levels and across all parts of the system engaged in priority setting and decision-making, particularly around models of care, quality and safety."

Considering this second stream of the literature, we see that having physician leaders in formal leadership positions may be an important contributor to improvement or performance, but it is insufficient to ensure the continued pursuit of improved clinical and system performance. The development of physician leadership is regarded in these different papers as an additional priority for health system improvement.

A third stream of related work focuses on the implementation of quality improvement initiatives in healthcare settings and the role that physician engagement and leadership can play in this process. Many researchers have observed the impact of physician involvement and support on successful quality improvement efforts (Blumenthal & Edwards, 1995; Greer, 2008; Horne, 1996; Lammers et al., 1996). The involvement of physicians in quality and safety initiatives often materializes through their involvement in dedicated structures and by the leadership they can exercise to get other physicians on board. Organizations often rely on bodies such as a quality council, where top managers and physicians share the responsibility of generating a quality agenda for the organization. For example, at the Veterans Health Administration, a quality improvement philosophy is assumed and promoted by both senior managers and physician leaders (Lammers et al., 1996). Quality councils are composed of clinical and administrative leaders who are in charge of quality improvement funding, planning and training and the initiation and supervision of teams.

In addition, some studies have focused on the advantage of having physicians participate on governing boards for the improvement of quality and safety (Baker et al., 2010). Research shows that physicians' participation in the governing boards of hospitals can increase quality and safety (Goeschel, Wachter, & Pronovost, 2010). The participation of physicians in the board can contribute to identifying specific, measurable and valid quality indicators consistent with organizational and system goals. In their capacity as board members, physicians can contribute to continuing education initiatives on quality and patient safety and may help develop joint medical staff or board training to face common challenges regarding quality and safety. Having

physicians involved also may help to soften potential conflict that may arise when boards and physicians embrace divergent goals or strategies. In some cases, however, the presence of physicians on a board may favour a more conservative approach to quality and safety (such as quality assurance, risk management or utilization review) rather than interactive and proactive processes for improvement.

The broad range of research and commentary on the structural determinants of physician engagement and leadership underlines the fact that many organizations and systems consider formal structural arrangements as the critical strategy for linking physicians and organizations more tightly. The evidence regarding the potential of structural arrangements suggests that engaging physicians in dedicated structures for improvement is a valuable option. Also, structural arrangements that formally integrate physicians within governance and management bodies and functions are a plausible contributor to improvement.

The challenge resides in integrating physicians and, at the same time, developing their sense of shared responsibility and the mutual accountability of physicians and organizations. This is why Burns and colleagues (1989) made the distinction between inclusion and participation. They emphasized the importance of developing structures that actualized these two elements of the relationship between physicians and organizations. In addition, as aptly noted by Bradley and colleagues (2006) in their paper on the improvement of complex care in hospitals, structures for clinical involvement are only one component of the improvement journey and the more complex task is to develop leadership for health system change and improvement.

B. Supportive Process and Contextual Elements

We focus here on the critical dynamics of physician leadership and engagement in organizations identified as high-performing, as compared with lower-performing organizations, and in organizations involved in quality improvement initiatives (Dickson, 2012; Holmes & Chu, 2012). Our objective is to explore the role of organizational context, strategies and processes favouring the development of physician engagement and leadership for improvement.

As noted by Atkinson and colleagues (2010) and Dickson (2012), engagement does not just happen—organizations must develop strategies and work at it. Our assessment of the potential structural levers to develop physician engagement and leadership (see previous Section II.A) has suggested that involving physicians in strategic leadership positions alone is likely insufficient to create high performance or improvement. The reason is that these leaders focus primarily on the larger agenda, and the critical issues are a mix of several issues: creating effective strategy, engaging and developing physicians and other clinicians in local microsystem change, and managing local unit dynamics to provide ongoing effective care. Based on a study of high-performing clinical units, Bohmer (2012) suggests that effective clinical leadership is by its nature distributed and interacts with strong unit leadership, communication and coordination.

In a review of organizational factors involved in implementing quality management in hospitals, Wardhani et al. (2009) conclude that local clinical champions may be in good positions to bring about changes and improvement in their immediate environment but are generally unable to influence other units. Similarly, senior leadership without the involvement of physician leaders seems to have very limited impact on implementing quality improvement initiatives.

Overall, it appears that managing the interdependency between physician leadership and managerial leadership creates an environment for healthcare improvement. According to Weiner, Shortell and Alexander (1997), clinical involvement is a multidimensional construct incorporating elements that relate to the practice and activities of individual physicians, to the organization and management of work within clinical departments or units (including data management and information support), and to the characteristics of the overall organizational context. In this section of our report, however, we review papers that focus specifically on the organizational environment that promotes physician engagement and leadership.

A study using a multimethod approach on a sample of US hospitals concludes that one of the key variables to promote and support physician involvement is the level of trust between physicians and organizations (Zuckerman et al., 1998). Trust can develop around the following elements: open communication, willingness to share relevant data, creation of a shared vision and accumulation of evidence of successful collaboration. Trust is important for achieving better alignment between physicians and hospitals and may help in designing and supporting proper incentives and clinical integration mechanisms (Metrics@Work et al., 2012; Kaissi, 2012). The importance of trust suggests that it may be difficult to anticipate the contribution of various structural arrangements to physician engagement and leadership without taking into account the broader organizational context and culture in which these mechanisms are used.

Becher and Chassin (2002) identify a series of conditions to support physicians' engagement in quality improvement initiatives, such as the sense of ownership of quality issues; development of a full spectrum of quality improvement strategies to address overuse, underuse and misuse of resources; reliance on valid and legitimate measures to guide improvement; and delineation of improvement targets both at the individual and more collective levels within the organization. The authors also highlight the importance of measuring the quality of care provided by physicians and of making these assessments public.

Different types of organizational actions also have been identified to promote physicians' engagement in improvement initiatives (Goode et al., 2002):

- certification and credentialing
- economic incentives to improve patient quality and safety
- identification of superior standards of care to show what can be achieved
- development of a business case in favour of practice improvements
- identification and training of leaders and champions for quality and safety improvement
- development of an external positive message to promote the commitment of the organization to become a high-performing organization
- creation of awards for individuals, groups and organizations that demonstrate exceptional performance
- public reporting of patient quality and safety information

Overall, these studies suggest that organizations can develop a diversified set of strategies to engage physicians in improvement initiatives, including actions that favour trust and accountability.

Effective physician engagement and leadership structures also likely rely on elements of clinical governance. Clinical governance is an umbrella concept widely used in the United Kingdom that

covers a set of management principles and tools (Department of Health, 2010) developed to reinforce clinicians' accountability for the use of resources and quality of care. It is structured around the following elements: standardization of professional practices, actors' accountability, continuous quality improvement programs, and involvement of professionals and users in governance and performance management. Dulvalko, Sherar and Sawka (2009) discuss the development of performance improvement and clinical governance at Cancer Care Ontario, where a strong emphasis on measurement and accountability helped to create more effective physician engagement.

More broadly, Hockey and Bates (2010) identify performance measurement and transparency as critical contributors to physician engagement and improved performance. But these tools may be insufficient in unstable or unsupportive organizational contexts. Clinicians in low-performing hospitals noted instability in leadership and their relative lack of clinical accountability. In high-performing hospitals clinicians saw leaders with clear values and commitment to quality of care, and strong linkage between the front line and senior leadership. These authors state:

Clear commitment to quality and safety by the high-performing hospitals was recognized by frontline physicians, and although some of these physicians were cynical about the hospitals' underlying motives, they were aware of what the organization valued at a corporate level.

Hockey and Bates (2010) also report that organizations in which there is stable leadership with a good relationship with individual physicians appear able to translate organizational values into sound clinical practice. Physicians in leadership positions may even limit the risk of losing focus on quality and safety in situations of executive turnover (Hayes et al., 2010). They can informally encourage and guide efforts to improve clinical cost and quality issues based on their personal experiences (by providing examples or narratives of clinical situations) and can be in a privileged position to recruit other physicians to participate in quality improvement committees and projects (Blumenthal & Edwards, 1995).

These papers suggest that organizational leadership can play a key role in improving quality by empowering its physician staff with support systems and an adequate understanding of quality improvement, which in turn would help translate quality improvement initiatives into practice.

The mechanisms for engaging physicians that facilitate higher performance or improvement are not addressed systematically in this literature. We will discuss four mechanisms, or themes, that emerge from the literature and relate to developing physician engagement for improvement and leadership roles.

Firstly, O'Hare and Kudrle (2007) discuss developing a physician "compact" as one mechanism that helps to clarify roles, expectations and accountabilities. The authors report on the impact of Jack Silversin, a US consultant who helped to facilitate improvements in physician-hospital relationships. A physician engagement survey showed low scores in physicians' satisfaction with their abilities to influence hospital medical affairs. Silversin (2009) worked with physician leaders and administrators to develop a compact to guide administrator-physician relationships. The new compact drove several key changes, including reinstatement of a vice-president of medical affairs who would be responsible for many physician engagement efforts. Medical staff structures were restructured using the tenets of the physician compact and guidance from

physician groups in the organization. New departments were created as were key councils across them. Following reorganization, physicians were surveyed again, and many areas showed improvements. A recent report on the experience of the Ottawa Hospital with physician compacts also describes success in using this mechanism for engagement (Scott et al., 2012). It suggests that it is possible to work on developing such a compact in an environment where physicians' manpower is relatively independent.

Developing a physician compact may be a way to act deliberately on the cultural dimension of physician engagement that has been identified often in research on quality improvement in healthcare organizations. Many researchers in this area suggest that it is through training at the undergraduate level and continuous education within practice settings that a "common culture" favouring physician engagement for quality improvement may emerge (Ferlie & Shortell, 2001; Lammers et al., 1996) (see also Section III.A on skills and competencies development). Education is seen as an effective strategy to promote a culture of quality improvement and to sensitize physicians to the importance of teamwork and leadership for improvement (Brand et al., 2007a, 2007b; Caldwell et al., 2008; Feldman et al., 2006; Ferlie & Shortell, 2001). Caldwell and colleagues (2008) identify what they call "group norms," representing a service climate related to a general set of behavioural norms in medical departments that can play a role in facilitating physician engagement through social control. Butcher (2012) suggests that developing team-based organizations may be instrumental in promoting these group norms by promoting a shift from a physician-centric model of organizing care to a more collective approach. The mechanism of a physician compact can solidify group norms in support of physician engagement and leadership for improvement.

A second important theme deals with the fact that physician leadership works best when there is an overall climate for change—a receptive organizational context—suggesting that leadership needs to be linked to broader strategy to create this receptive context. It's not just physician leadership and engagement that produce improvement; improvement is generated by creating a more supportive culture for quality patient care and a better work life (MSEQWG, 2012). According to Zimmerman et al. (1993), more effective patient care units are characterized by strong medical and nursing leadership that facilitates local improvement, a point reinforced in more recent work by Bradley et al. (2001, 2006) and Bohmer (2012). Zimmerman et al. (1993) conclude that skills and technology are insufficient for superior performance in intensive care units. A patient-centred culture that emphasizes strong leadership, coordination, communication, and open, collaborative problem solving and conflict management creates a context for better performance. In addition, to align the physician enterprise for superior clinical outcomes, patient safety and patient experiences, the capacity of an organization to support open dialogue and communications among board members, physician leaders and senior leadership around the delivery and quality of care is critical (Rice, 2012).

Similarly, Caldwell et al. (2008) report on a study of leadership and strategic change in a large physician organization in the western United States (likely Kaiser Permanente) where the authors carried out interviews and collected surveys. Two broad conclusions can be drawn from their findings. First, intangible factors such as support for a new strategy, group norms and leaders' actions can influence implementation. Second, the effects of these social processes are primarily interactive. Effective leadership has the greatest impact when a group has a positive orientation

toward change. In addition, a positive orientation toward change coupled with support for new strategy increases the success of implementation.

These findings are quite consistent with a broader literature that relates team leadership to team success (see, for example, Hackman & Wageman, 2005; MSEQWG, 2012; O'Reilly et al., 2010; Taitz, Lee, & Sequist, 2012). In a larger study of eight US hospitals examining initiatives and strategies for improving care for patients with acute myocardial infarction, Bradley and colleagues (2001) found six factors that characterized hospital-based improvement efforts: the goals of the efforts, administrative support, support among clinicians, design and implementation of improvement initiatives, use of data, and modifiable variables. Hospitals with greater improvement in beta blocker use over time demonstrated four characteristics not found in other hospitals with less or no improvement: shared goals for improvement, substantial administrative support, strong physician leadership advocating beta blocker use and use of credible data.

In a survey of charismatic leadership in six German hospitals (543 respondents), Boerner and Dutschke (2008) conclude that the level of autonomy of nurses and physicians mediates positively the effect of charismatic leadership on initiative-oriented behaviours among followers. These positive behaviours support the implementation of change and improvement, and job stress does not seem to play a role in mediating such relationships. This study suggests that promoting physician engagement toward organizational goals may be facilitated by maintaining a sense of professional autonomy within the organization while simultaneously enabling physicians and other professionals to recognize the importance of the organization in producing high-quality care and services. Engagement in this sense is more voluntary than coercive, and it seems possible to encourage engagement even in very demanding work environments.

Recent discussion on the habits of high-performing clinical systems by Bohmer (2012) argues that “leaders at the lowest level of delivery organizations, where clinicians and patients interact, have control over a set of organizational levers that have been shown to have a meaningful impact on both intermediate medical outcomes (e.g., error rates) and terminal outcomes (e.g., readmission and mortality rates).” A variety of work supports this point. Research on the effectiveness of quality improvement underlines the critical role of clinical microsystem leaders in improvement (see Nelson, Batalden, & Godfrey, 2007). The implication of this work for developing physician engagement and leadership for improvement is important; it elaborates and extends learning gained from research on quality improvement that reveals the importance of organizational context in producing improvement (Blumenthal et al., 2012). More fundamentally, it provides a basis for understanding how organizational context can support clinical improvement and physician engagement in such improvement efforts (see Baker et al., 2012; Bohmer, 2011) as well as the nature of physician leadership that may be conducive to improvement.

A third theme, the importance of physician leadership for improvement, has emerged in several studies that examine the factors that contributed to improved clinical performance (echoing the issues identified by Zimmerman et al. [1993] 20 years ago) and to the type of leadership that can be developed to support physician engagement. For example, in a study of the length of stay of patients with congestive heart failure in one organization, Albert, Sherman and Backus (2010) determined that this project was successful primarily because of physician leadership and assigning physicians as “Green Belts” (<http://prdweb.asq.org/certification/control/six-sigma-green-belt/index>) from project inception. The commitment and involvement of top management

within the organization multiplied the positive effects and made a significant impact at all levels. Continuous communication was essential, especially in an organization that used mainly a voluntary physician staff.

Different leadership appears to be needed for different organizational situations (Shumway, 2004). Vina et al. (2009) surveyed high- and low-performing US hospitals to identify the role of organizational factors in determining performance. High-performing organizations had a chief medical officer who was more inclined to focus on adherence to quality indicators. The study also points to the benefits of designating physicians as champions for specific clinical conditions as a strategy to improve the quality of care. Ferlie and Shortell (2001) emphasize the role of transformational leadership and transactional leadership in improving health systems and the need to balance and align instrumental and non-instrumental elements in leading clinical improvements. The key roles of senior leadership include focusing on priority setting and strategic objectives, mobilizing resources to support organizational learning, implementing mechanisms to favour continuity of care (Weiner et al., 1997), facilitating cross-functional teams and, more generally, providing a supportive environment for improvement (Ferlie & Shortell, 2001).

One of the important messages derived from these studies is that, although senior leadership is key, its actions are not enough to support improvement and to create the capacity to act. Responsibilities for improvement need to be delegated across the organization to create agents of change within different spheres of influence (within teams and among clinical staff in general) (Brand et al., 2007a, 2007b; Caldwell et al., 2008; Lammers et al., 1996; Solberg, 2007). These considerations suggest the importance of rethinking our approach to physician leadership within healthcare organizations and to leadership for improvement in general.

Contemporary research sees leadership more as a process and a set of practices performed by numerous individuals throughout organizations than in terms of a single individual in a formal position of authority (Alvarez, Svejnova, & Vives, 2007; Denis, Langley, & Rouleau, 2005, 2010; Metrics@Work et al., 2012; Raelin, 2005). Such research shifts the emphasis from individual traits and behaviours to the study of more distributed and collective forms of leadership (Denis, Lamothe, & Langley, 2001; Gronn, 2002). The collective property of leadership refers to the sharing of leadership roles among a set of actors in a complementary manner. These groups of organizational leaders combine a diverse set of expertise, skills and sources of legitimacy to respond to system challenges (Denis et al., 2001). Distributed leadership denotes the degree to which such roles are spread across a system or an organization (Buchanan, Fitzgerald, & Ketley, 2007). Because of the fundamental characteristics of healthcare organizations, leadership is widely distributed and is de facto not concentrated in the hands of a few administrative or physician leaders. The challenge is to harness these various sources of leadership to improve care and services. When such leadership roles and responsibilities are shared among many individuals in the organization, cohesion and co-operation among leaders are crucial.

A fourth theme emerging from this literature is the importance of teams and team leadership as a favourable context for physician engagement and leadership and ultimately for improvement (Metrics@Work et al., 2012). In quality improvement, teams of professionals and other staff are deliberately created to improve care processes in hospitals and other settings. Managing multi-tasking processes and developing the co-operation of these individuals is thus critical to

achieving high levels of team performance (Lammers et al., 1996; Shumway, 2004). Typically, quality improvement initiatives are based on effective quality improvement teams (Caldwell et al., 2008; Lammers et al., 1996). Team development (teamwork or team dynamics, team leadership, team building) thus provides an important avenue for physician engagement and quality improvement implementation in general (Brand et al., 2007a, 2007b). Within this literature, physicians are seen as having a pivotal role in developing team effectiveness (Jain et al., 2008). However, reflecting our earlier discussions, some authors writing on teamwork in healthcare (Heinemann & Zeiss, 2002; Jain et al., 2008; Majmudar et al., 2010; Weller et al., 2010) argue that effective teams do not develop in a vacuum—organizational context plays a facilitative role in promoting effective teams and also in promoting the key role of physician leaders in team effectiveness. Physician leaders are considered as well-positioned to foster transient task-specific leadership, positive team context and the adoption of a patient-oriented posture (Dowton, 2004; Jain et al., 2008). Physician leaders can play a liaison role between clinical teams and the broader organizational environment. The tactics of leadership in teams, such as leader behaviours in a sample of emergency departments, have been studied (Lin et al., 2011).

Based on an empirical study by Howard and colleagues (2012), a specific type of leadership behaviour—inclusive leadership—seems to be associated with team effectiveness. Three physician leadership behaviours have been observed to promote team effectiveness: explicit solicitation of team input, engaging clinicians in participatory decision-making and facilitating the identification of non-team members with improvement goals. Effective leadership inclusiveness is not achieved uniquely through such isolated or specific behaviours and benefits also from a more fundamental orientation toward inclusiveness within the organization (Howard et al., 2012). Specific leadership behaviours appear to be associated with team development. Two major types of behaviours have been identified: functional behaviours (used to manage team performance) and team development behaviours (used to build conditions that enable engagement and team performance). Functional behaviours include information gathering, planning and decision-making, and managing team members (their roles, responsibilities and task definitions, for example). Team development behaviours include team orientations and the establishment of team norms regarding functioning, co-operation and standards of care (Reader, Flin, & Cuthbertson, 2011). Although team-based organizations can provide a favourable context for physician engagement and leadership, Reader and colleagues (2011) also observed the challenge involved in developing effective teams composed of physicians of different disciplines.

In primary care settings, Wolfson et al. (2009) found that leadership and teamwork were seen as crucial to performance improvement. More than half the physicians studied cited practice leadership as crucial to the initial measurement activity, and almost three-quarters pointed to the role of leadership and co-operation in implementing a quality improvement strategy. However, leadership was not enough. Almost half of the physicians reported that the “teamness” of the group practice was an internal facilitator to quality improvement. Further, practices that succeeded in quality improvement had office cultures that valued teamwork and shared responsibility and also featured routine, matrixed interaction among physicians and between doctors and support staff. Financial incentives were not viewed as important. The study points to the interaction of factors; for example, exposure to quality improvement collaboratives,

provision of data and the emergence of a commitment to quality improvement in the practice are important to successful quality improvement efforts.

Developing a physician compact, a facilitative and receptive organizational context for physician engagement and leadership, more collective and distributed forms of leadership, and team-based organizations are considered valuable elements to promote physician engagement and leadership for improvement. The studies reviewed in this section all highlight the critical role of physician leadership and engagement in improving performance. They also suggest that leadership needs to be present at both the microsystem and organizational levels and that supportive organizational contexts that set goals and provide information and support to front-line teams can have a reinforcing, enabling effect on engagement and leadership. Organizational or system contexts that facilitate recruiting physicians into various governing and decision-making bodies, mobilizing front-line physicians in improvement efforts, and focusing on measurement and performance management may also favour the development of more distributed and collective forms of leadership.

Although a facilitative context for physician engagement and leadership can be nurtured, Snell, Briscoe and Dickson (2011) conclude that the values of physicians also play a fundamental role in the decision to engage in leadership roles for improvement. The authors base this conclusion on a study of a population of physicians trained in a leadership development program in Canada. Beyond values, the authors propose an interesting distinction between engaging and disengaging experiences faced by physicians in organizations. Reinforcing factors within the organizational or system environment such as recognizing the leadership roles of physicians, providing opportunities for learning and development activities with proper compensation, and minimizing bureaucratic frustrations can foster physician engagement in leadership roles (see further development in Section III.B on physician leadership roles and identities). This study indicates that medical professionals may be segmented in various subgroups that are more or less inclined to engage in leadership roles at the level of clinical departments or units and organizations or systems (Snell et al., 2011). Developing leaders at the policy, organizational and clinical levels who are working in synergy may be necessary to achieve reorganization or improvement of services. The challenge of creating such a constellation of individuals and supportive environments is emphasized by the fact that cross-learning among these different groups appears necessary to develop effective leadership within the healthcare system.

Overall, the research papers in this section suggest that physician engagement and leadership will materialize through a configuration of facilitative factors that may characterize organizational and microsystem or practice settings.

C. Policy Implications From Research on the Organizational Dimensions of Physician Engagement and Leadership

Much of the literature dealing with the structural determinants of physician engagement and leadership is based on experiences in the US healthcare system and on the role of physicians in organizations under a shift to more managed care. To some extent, there is a bias in the literature that focuses on incorporating physicians into the “business model” of hospitals (often from a financial accountability standpoint) and a shift from previously viewing physicians as primary customers of hospitals to now seeing them as partners in healthcare system management. Yet, as

some studies and reviews suggest, the potential for the economic integration of physicians is quite complex (Burns & Muller, 2008; Metrics@Work et al., 2012; Robinson, 1997).

According to the body of research in this section, it seems as though different scenarios of physician integration can be developed based on two different levels of inclusion and participation. First, physician engagement and leadership for health system improvement requires consideration of how to engage physicians (and other key clinical leaders) in governance and management. Second, such physician integration also requires reflection on how to mobilize front-line physicians in improvement initiatives supported by a facilitative organizational context and clear accountability. As noted previously, however, structural mechanisms are only one element of a broader strategy to engage physicians and foster physician leadership for health system improvement.

This literature conveys a sense of movement toward a tighter coupling of interests, both psychologically and financially, between physicians and hospitals that resonates more with physician *engagement* than with the development of physician leadership (Taitz et al., 2012). In this context, physician leadership is seen as a resource to support efforts to engage physicians and to reinforce their accountability to the organization or system. Developing roles for physicians at the governance and managerial levels of decision-making facilitates broader engagement and performance improvement. In a way, developing organizational structures that favour physician engagement and leadership is an asset upon which more organic or process elements can build (see the roles of group norms below, for example).

Although some insights from the US literature on physician integration in organizations can be applied in the Canadian context, their relevance requires removing some of the "business lens" of the studies of the US system and digging a bit deeper to identify some basic theoretical concepts in order to understand the broader context of physician engagement and leadership for improvement. The literature on the process of engaging physicians and of developing medical leadership reveals some of the key levers that organizations can develop.

One important issue that is not fully addressed and requires further examination is the question of reconciling system and organizational imperatives and goals, on the one hand, with clinical autonomy, on the other hand. As aptly noted in the article by Snell et al. (2011), true physician engagement and leadership begins with the underlying characteristics and values of the engaged physicians. Recognizing this fact supports the argument that the aptitudes of physician leadership and engagement should be considered by medical school admissions committees and further fostered by medical school, residency training, post-fellowship education and curricula, and in practice settings. This conclusion dovetails with the challenges of developing physicians' skills and competencies for assuming leadership roles and getting more actively engaged in health system improvement. Organizations play enabling and reinforcing roles by promoting the development of facilitative and receptive contexts for physician engagement and leadership.

The literature on quality improvement clearly concludes that physician participation in quality and patient safety is necessary to be able to improve it. Still, most physicians' primary focus is with their own practice—the quality of care they personally deliver—and the economics of their own professional microsystems (Reinertsen, Bisognano, & Pugh, 2008), not the performance of the broader organization.

Contemporary works on improving clinical microsystems suggest that investing in the development of supportive environments for the day-to-day work of physicians provides favourable conditions for physician engagement and leadership. These environments combine elements of technical support, work models like team-based organizations and group norms that favour a commitment to improve the quality and safety of care. Broader organizational contexts also play a key role by supporting physician involvement at all levels of decision-making within the organization and by fostering communication channels between the organization's strategic apex and front-line clinicians. Support for developing new competencies and skills for physicians that lead to quality improvement is part of this "new deal" between the medical profession and the organization. Developing a physician compact has been cited as a process to develop a new form of engagement (social contract) between the profession and the organization where their respective obligations are mutually defined, and this seems accessible for Canadian healthcare organizations.

Overall, these papers related to organizational dynamics underscore the need for a combination of structural mechanisms such as joint decision-making and management structures, recruiting physicians in key leadership and well-designed positions, and physician participation on boards. Coupling these combined structural mechanisms with investments in developing a culture of commitment to improving care and services and an organization of the work that is well-aligned with this commitment can create the conditions that enable healthcare organizations in Canada to achieve progress.

One of the key findings in this section of our review is that physician engagement depends on a mosaic of organizational factors and on more attention to clinical leadership and competencies and skills development within the context of the delivery of care. The design of more effective clinical units (microsystems) may be a promising approach both to develop physician engagement and leadership and to identify along the way some plausible elements that relate to structure.

In a recent work, Baker et al. (2012) conceive "clinical care management systems" as resulting from five interacting strategies, or organizational capabilities. First, such systems develop around interdependent team and improvement skills. Second, clinical care management systems require a system design and population focus that identifies current and projected needs for health and healthcare. Third, system leadership, execution and deployment are necessary to establish the system strategy, thus linking strategy to local improvement and communicating front-line issues and results. Fourth, these systems require a clinical knowledge management strategy that integrates knowledge of effective practice with information on local populations and local care-delivery experiences. Finally, organizations need an explicit physician engagement and leadership strategy designed to overcome the typical bifurcation of knowledge, power and accountability between practising physicians and administrative leadership.

Our contention is that too much focus on structure will be insufficient in the short or medium term to provide the necessary impetus to increase physician engagement and leadership for improvement. Still, successful strategies may vary from context to context, and some structural options, like stronger economic integration of physicians with organizations, can be positive in some environments. One should remember here that integration does not necessarily equal commitment to improve care and services or participation in addressing key organizational and health system issues.

D. Main Messages (Organizational Perspective)

- The boundaries between physician engagement and physician leadership are more blurred than anticipated, and the processes of engaging physicians and of developing their leadership for system improvement actually interact and are mutually reinforcing.
- Creating a cohort of engaged physicians creates a talent pool of physician leadership for health system improvement.
- Supporting physician engagement and leadership requires development of a facilitative context at the organizational or system level, and economic incentives are only one part of such a context.
- Various strategies have been suggested in this literature to support physician engagement and leadership, such as developing physician compacts, adhering to a more collective approach to leadership development and using teams.
- Clinical units (microsystems) provide unique opportunities for developing physician engagement and leadership.

The issue of developing physicians' skills and competencies emerges frequently in the literature we consulted on organizational factors that may support physician engagement and leadership. The next section will present findings around strategies and conditions to further develop skills and competencies for physician engagement and leadership for health system improvement.

III ► INDIVIDUAL DETERMINANTS OF PHYSICIAN ENGAGEMENT AND LEADERSHIP

A. Skills and Competencies Development

Virtually all the papers on the skills and competencies needed to support the development of physician leaders convey urgency with respect to the need for physician leadership. The causes for this urgency vary. They include the need for cost containment (Schneller, 1991; Schwartz et al., 2000; Souba, 1996; Stoller, 2009), the desire to improve healthcare quality (Berwick & Nolan, 1998; Hayes et al., 2010; Leape, 2006), an obligation to protect the mission of academic medicine (including medical education and research) (Souba, 1996), a commitment to improve the state of population health (including ensuring healthcare access) (Devaul, Knight, & Edwards, 1994), and the threatened or real compromise of physician autonomy (Schneller, 1991), integrity and/or medical ethics in the current healthcare environment.

Several priority areas of focus for physician leadership compete, suggesting that not all leadership roles for physicians can be viewed equally. These areas include general, senior level health organization or system management (Guthrie, 1999; Schneller, 1991) (that is, "beyond" the medical director role), quality improvement (Berwick & Nolan, 1998; Hayes et al., 2010; Leape, 2006) and the social determinants of health (Souba, 1996).

Taking into account traditional medical training and its necessary focus on teaching clinical skills for individual patients, several key questions arise about how physicians should be equipped with appropriate skill sets to successfully fill leadership roles, such as the following: What are the competencies required for the optimal physician leader? What is the evidence that acquiring the stated competencies is tied to better organizational performance? What are the best

strategies and learning formats in which to cultivate these competencies, and how can we best evaluate the effectiveness of available programs?

Determining the skills and competencies required for the various types or levels of physician leadership roles necessitates making several key distinctions. DeVaul, Knight and Edwards (1994) carefully distinguish between the concepts of leadership and management. Guthrie (1999) articulates a difference between formal and informal leadership, while the concept of training rather than selecting candidates for leadership positions is described by Schwartz et al. (2000) and Taylor, Taylor and Stoller (2008). Importantly, Collins and Porras (1997) highlight that the most successful companies rarely recruit leaders from outside their organization, instead training or selecting leaders from inside the organization to maintain alignment with institutional vision and goals. Another key distinction to make is between “leading physicians” and “physician leaders for health system change.” This distinction is summarized well by Reinertsen (1998) in the following statement: “Being a physician leader is not about being the best physician or a perfect representation of a physician; becoming a physician leader means becoming someone altogether different.”

There are numerous criticisms of current physician leadership models. During medical or postgraduate training, limited managerial training and/or mentoring occurs. Compared with other leadership or executive-level positions, few well-defined, objective managerial goals exist for physicians who are blending a leadership role with a clinical practice. Physicians have limited involvement in financial aspects, or the “business,” of medicine at an organizational or system level. And frequently a “marginal” position created for the sake of attempting to demonstrate physician engagement is recognized as being a position for neither a “true leader” nor a “true physician” (Schneller, 1991).

Despite the limitations of current physician leadership constructs, examples exist of well-developed *concepts* for potential physician leadership models. Schneller (1991) describes a role for physicians in organizational and health system management, arguing that physicians need to contribute beyond the role of medical director at the senior management table and to participate more substantially in strategic planning for the organization or system. Schneller also argues for clinically focused change, including having physicians serve as “champions of clinical integrity.” Kindig and Santiago (1986) explain the concept of “boundary spanning,” which describes certain physician leader functions such as the translation of clinical data into meaningful information for health system management (Schneller, 1991) and/or the translation of system and/or organizational issues to the public or other health professionals (Guthrie, 1999; Schneller, 1991).

Enablers for physician leaders

Several papers note various enablers or system supports to foster physician leadership. Guthrie (1999), Souba (1996) and Devaul et al. (1994) describe the benefit of having physician role models and mentors, as well as intergenerational and peer physician leadership networks. Mentorship does not always have to be from other physician leaders. O’Hare and Kudrle (2007) describe senior managers and government officials perceived to be responsive to physician concerns and non-physician senior leaders perceived to be accepting and encouraging of physician leadership as potential mentors for physicians in leadership roles. An important aspect of playing a leadership role is the ability of physicians to maintain their clinical practice (Schneller, 1991). Schneller also states: “Physicians focus on the importance of having clinical

competence and experience as a path to building trust and credibility, especially with other physicians.” Guthrie (1999) notes that physicians are more inclined to be engaged in physician leadership roles if using physician time is done strategically and efficiently.

Barriers for physician leaders

One of the well-known barriers to physician leadership speaks to the physician–management divide, fuelled by the perception of rival ideologies and the existence of different cultures, occasionally referred to as “enemy camps” (O’Hare & Kudrle, 2007). From the physician’s perspective, this divide is sharpest when management focuses on short-term fiscal goals to the apparent detriment of patient or population health (Stoller, 2009). Guthrie (1999) comments that “many doctors are convinced that few other people care about patients the way they do.” From management’s perspective, this divide is fuelled by the belief that physician behaviour is individualistic and organizationally inept (Schneller, 1991) and is motivated (at least in part) by personal financial gain. Furthermore, O’Hare and Kudrle (2007) and Stoller (2009) propose that the cultures of the two professional groups are distinct, with physicians trained to think “linearly” and “hierarchically” and managers trained to think “systematically” and “collaboratively.” For physicians, success is measured by intrinsic results, such as individual patient outcomes. For managers, success is measured by surrogate markers, such as financial benchmarks.

Importantly, however, when examining the aims of the two sets of professionals, the differing cultures can be understood as complementary and codependent. Whereas physicians are concerned with preserving their specialized pursuit (including the pursuit of care for individual patients, maintaining professional autonomy or protecting personal financial positions), managers are concerned with preserving the organization as a whole (Berwick & Nolan, 1998; Guthrie, 1999). To create a functional physician leadership opportunity, there is a need to find or create a set of values that respect the classic physician pursuit of individual patient care and simultaneously allow for the effective pursuit of organizational strategy (Schwartz et al, 2000).

How physicians may view managers or managerial roles and individual patients as opposed to the “system” reflects to some degree the limits of current medical education, wherein “physicians are taught to do their very best within the system and to perfect themselves as individual professionals ... not [to make] a better system” (Stoller, 2009). Berwick and Nolan (1998) note that the natural result of traditional medical training is to produce professionals who see their role as “patient advocate, protector, and savior,” not as advocates, protectors and saviours of the system writ large. Physicians are taught to work autonomously, to recognize patterns and to prescribe solutions. This is counter to the necessary collaborative analysis of novel system problems and the building of consensus required for health system change (Stoller, 2009; Wharry, 1997). Innovations in medical training, at all levels, are required to overcome this barrier.

Not only does the traditional medical training shape physicians’ perceptions of their role with patients or the broader healthcare system, but the scientific method and an evidence-based approach predominate in a clinician’s decision-making process about the management of patients. This model does not always easily apply to system manager or leadership decision-making processes. For physician leaders, it must be acknowledged that a balance is necessary between the need for immediate action and the benefits of scientific rigour (Devaul et al., 1994).

Other possible barriers to fostering physicians in leadership roles may relate to reward structure and competing priorities and demands on time. The current reward structure for academic and non-academic practising clinicians places greater emphasis on traditional academic and clinical success, rather than on any measure of leadership readiness or skill (Stoller, 2008). Also, the high and competing demands on the time of both physician learners (Busari, Berkenbosch, & Brouns, 2011) and practising physicians can be a disincentive for physicians wishing to pursue leadership positions.

Required skills and competencies for physician leaders

Across the literature are several themes of what would be considered *requisite knowledge* for physician leaders, including these:

- an understanding of how government functions (Berwick & Nolan, 1998)
- an understanding of the current health system challenges (NCHL Healthcare Management Leadership Competency Framework, in Baker, 2003), including the current legal and policy landscape (Lobas, 2006; Schwartz et al., 2000), and of the complex dynamics of health system change (Stoller, 2008; Taylor, Taylor, & Stoller, 2008)
- basic knowledge of management fundamentals, such as accounting, finance, informatics and organizational behaviour (including personnel management) (Berwick & Nolan, 1998; Busari et al., 2011; Lobas, 2006)
- knowledge of healthcare improvement models, including the PDSA cycle (Taylor et al., 2008) and engineering principles to redesign processes of care (Stoller, 2008)
- the capacity to define metrics and measure performance (Taylor et al., 2008)

The LEADS Framework, developed within the Canadian context, identifies five areas for developing effective healthcare leaders: lead self, system transformation, engage others, develop coalition and achieve results (<http://www.leadersforlife.ca/leads-framework>).

Similarly, several *characteristics, qualities and abilities* are required for physician leaders to be successful in leadership roles. Many of these are baseline traits that also contribute to the success of non-physician leaders. Guthrie (1999), Stoller (2008), and Berwick and Nolan (1998) describe traits such as emotional intelligence, charisma and intellectual curiosity, or the desire to pursue a challenge (Lobas, 1996), combined with a lifelong commitment to learning as key factors for success. Along with passion for ongoing learning, physician leaders must possess the ability for new thinking, to generate new ideas and articulate a clear vision for the future (Berwick & Nolan, 1998; Devaul et al., 1994; Guthrie, 1999; Wharry, 1997). Ideally, this vision can “incorporate each individual physician’s positive self-interest in a balance with the larger purpose of the organization” (Guthrie, 1999). Teamwork is essential in leadership skills: the ability to work closely and co-operatively with others, to delegate and, when appropriate, to engage in collaborative problem solving. All of this is anchored by an ability to communicate effectively coupled with the capacity to develop a “style of persuasion that includes and allows the participation of their physician colleagues” (Stoller, 2008). Beyond skills and aptitudes, there is a requirement for commitment to high personal ethical standards (Busari et al., 2011) and to the “healing mission of medicine” (Schwartz et al., 2000), as optimized by possessing the traits of compassion, hopefulness (Stoller, 2009), caring and empathy (Taylor et al., 2008). Ideally, this commitment is combined with a belief that a high-functioning healthcare system is needed to achieve individual patient outcomes (Guthrie, 1999). Willingness, maturity and intellectual

curiosity are also mentioned as selection criteria. Above all, leaders must possess a sense of organizational altruism: the dedication to organizational success even at personal sacrifice (Stoller, 2008).

Our review of this literature revealed several *core competencies* contributing to a framework to engage and foster physician leadership. These competencies include:

- leadership (Metrics@Work et al., 2012; NCHL Healthcare Management Leadership Competency Framework, in Baker, 2003; Schwartz et al., 2000)
- strategic planning (Schwartz et al., 2000; Stoller, 2008)
- “systems thinking” (Lobas, 2006)
- change management (Lobas, 2006)
- project management (Baker, 2003; Stoller, 2008; Taylor et al., 2008)
- persuasive communication (including negotiation and conflict resolution) (Baker, 2003; Busari et al., 2011; Metrics@Work et al., 2012; Schwartz et al., 2000; Stoller, 2008)
- team building (Lobas, 2006; Metrics@Work et al., 2012; Schwartz et al., 2000; Taylor et al., 2008)

Most of these competencies would require training in some capacity beyond that currently included in medical school curricula or postgraduate specialty training. Following up on this idea, some literature is devoted to describing specific curriculum and specialized programs. Various forums include internal training programs, external certificate programs, formal degree programs and web-based learning. In all forums, participatory and/or case-based learning is considered optimal (Wharry, 1997). Guthrie (1999) also highlights the need for non-MD educators. Continuing medical education (CME) is mentioned, and however popular and easy to administer, the many shortcomings of the CME model are noted. The CME format is unable to provide the breadth or depth of material needed, does not require the necessary personal interaction with the required material over time and does not traditionally provide the essential specific information about the local healthcare environment (Stoller, 2009). Most importantly, CME training does not facilitate the very important interprofessional team building needed to facilitate health system change (Barratt, Bateman, & Harvey, 2010).

Programs of particular interest for use in jurisdiction-specific curriculum development may include courses offered by:

- the Canadian Medical Association Physician Manager Institute (Wharry, 1997), which focuses on practising physicians
- the American College of Physician Executives (Guthrie, 1999)
- the American College of Healthcare Executives (Stoller, 2009)

Additional courses are offered at leading American universities (including Harvard, Wharton College of Business, Cleveland Clinic, Mayo Clinic, Tulane, University of Wisconsin–Madison, University of California–Irvine) and some British (Barratt et al., 2010) and Canadian universities. Course offerings and curriculum descriptions vary and continue to evolve over time.

B. Development and Dilemmas of Physician Leadership Roles and Identities

Overall, the papers in this domain tend to focus more on the formal roles for physicians as leaders (clinical directors, medical managers, department heads, medical chief executives, etc.) and less (or less explicitly) on general physician engagement.

The point of departure for all of these papers is the broader context of healthcare reform and of managerial trends reshaping the public sector in general. Introducing formal physician leadership roles is explained as part of this major trend:

Health care reforms, market forces (restrained resources and increased competition) determine several changes in the system: increased physician-hospital integration, merged hospital systems, integration with insurers and physicians, etc. In turn, physicians are propelled to shift from solo, autonomous and self-regulated practices to collective, collaborative, and externally managed ones, where they play important leadership roles (Kusy, Essex, & Marr, 1995).

Transforming complex health systems will require the engagement of physicians as leaders in their health care settings, in both formal and informal roles (Snell et al., 2011: 952).

Moreover, most of these papers assume the existence of tensions between managerial values and professional values. This assumption is congruent with the ideas introduced in Section I concerning the presence of multiple institutional logics traversing the healthcare field. However, here the manifestation of these logics is explored at the more individual level. Specifically, these studies explore the roles and identity dilemmas inherent in the newly established physician leadership roles at the boundary between the two cultures of management and the medical profession.

Cultural differences are defined here in terms of differences in decision priorities. Management focuses more on allocating resources and efficiency, while clinicians focus more on patient care. Many physicians view the organization as being highly bureaucratic and characterized by inertia, whereas their professional values are oriented toward rapid decision-making, innovation and less hierarchical relations. Such cultural differences may impede the communication and collaboration between the two groups and limit the interest of physicians for broader organizational roles and responsibilities (Edwards, 2005; Fitzgerald et al., 2006; Guthrie, 1999; Llewellyn, 2001; Waldman & Cohn, 2008).

The literature in this section theorizes ways to solve the resulting role and identity conflicts. More specifically, the questions addressed by these papers can be grouped into four areas, also corresponding to an evolution of the focus through time. The first three areas of interest, with approximate publishing dates, are these: exploratory questions concerning the role of physician leaders, with contributions dating mainly from the 1990s; the practices and sense making associated with physician leaders' work, dating from the 2000s; and outcomes in terms of the organizational effectiveness of physician leadership roles, dating from the late 2000s. The fourth area contains proposals for ways to overcome role and identity conflicts and thus to achieve better integration of physicians in leadership roles, with many more recent contributions.

The typical research questions explored in the first set of contributions (from the 1990s) are about the roles of physician leaders: “Who are physician leaders?” (Kusy et al., 1995); “What exactly qualifies a physician executive?” (Kindig, 1997); and “What are the characteristics of the [physician leader]?” (Williams & Ewell, 1997). Healthcare reforms and trends in the 1990s resulted in the introduction of new roles. Accordingly, researchers started to explore the characteristics of this new figure, for example, through surveys of US hospitals that were already implementing this change (Kusy et al., 1995; Williams & Ewell, 1997) or by informed comments grounded in practical experience in the field (Kindig, 1997).

Taken together, these first studies report that the numbers and importance of physician leaders were increasing along with expectations of their positive impact on hospital performance. Results from surveys and from informed experience indicate that managerial training is one important factor that predicts physician leader success (Williams & Ewell, 1997). However, managerial training on its own is not sufficient (Kindig, 1997) because other factors, such as clinical experience, building credibility and trust, and working collegially and not individualistically (Kusy et al., 1995), also appear to be critical.

The second wave of studies, starting roughly in the early 2000s, focuses on the practices of physician leaders. After their first understanding of the expectations related to physician leaders’ new roles and acknowledging the existence of potential clashes between managerial and medical mindsets, researchers seem to have shifted attention to a deeper understanding of “how physician-managers think and behave” (Hoff, 1999), “how medical managers perceive their role” (Llewellyn, 2001) and “what is physician leaders’ lived experience” (Ham et al., 2011; Snell et al., 2011). Accordingly, research in this domain started to be dominated by more fine-grained qualitative work based on in-depth case studies or extensive interviews across cases. Most of the papers concentrate on these kinds of research questions and seem to constitute a conversation that is still open (time range: 1999 to 2011).

A finer subdivision of these “second wave” papers shows that, while they all address the issue of what physician leaders do and/or think in general, some specifically explore how physician leaders are able to mediate between the different worlds of medicine and management (Gilmore, 2010; Iedema et al., 2003; Kippist & Fitzgerald, 2009; Llewellyn, 2001). One paper explores through a survey what drives physician leaders’ decision-making in Finland (Viitanen et al., 2006), and one attempts to explain, among other things, the variety of physicians’ reactions to introducing management roles in their work (Hallier & Forbes, 2005). Notably, most of these papers deal with cases outside Canada (from the US, the UK, Finland, the Netherlands and Australia).

The papers from the second wave that dig more deeply into the actual work of physician leaders reveal a highly complex and controversial reality. Engaging physicians in leadership roles is not a linear process but an emergent, evolutionary one that takes longer adaptation times than the introduction of formal changes by organizations (Hoff, 2003). Moreover, this change is undermined by serious role and identity conflicts, that is, by the need for physician leaders to assimilate and integrate undefined or seemingly competing values. This complex identity work has consequences in terms of social relations too: physician leaders’ work is characterized by little cohesiveness and fragmented solidarity, distrust and game playing, as opposed to the ideal typical collegiality of the medical profession *tout court* (Hoff, 1999).

Adding to this complexity is the varied pattern of physicians' responses to these challenges. Some physician leaders appear to be more aligned with organizational and managerial values, while others appear to be more aligned with medical professional identities (Gilmore, 2010; Hoff, 1999; Snell et al., 2011). This variability is not limited to individual values. In some contexts physician leaders seem to remain clinicians rather than management-oriented leaders (Viitanen et al., 2006), whereas elsewhere they exhibit a greater inclination for managerial roles (Steinert, Goebel, & Reiger, 2006). This variance depends not only on different personal attitudes toward managerialism but also, and most importantly, on the degree of fit between role expectations and role experiences, especially as far as physician leadership experiences confirm or contradict perceptions of social categorization and identity (Hallier & Forbes, 2005).

In any case, it seems clear that the main job of physician leaders is to mediate among worlds and that discursive activity plays an important role. By analyzing what physician leaders do, research has shown that they develop a new, hybrid discourse where both medical and management issues become transparent to one another (Llewellyn, 2001). Some studies suggest that it is the ability to switch continuously between professional and management discourses even in the same stream of talk that helps integrate different sets of ideas for different audiences, creating a new domain where values are more integrated and conflicts are potentially solvable (Iedema et al., 2003).

Summarizing this literature on physician leaders' practices, Dwyer (2010) proposes a preliminary classification of physician leadership roles into four categories:

- leadership and management of medical staff deploying the roles of negotiator, translator between medical staff and the organization, and advocate of medical staff
- involvement with strategy and organizational development, referring mainly to advocacy to executives, including participation in strategic planning and service development
- executive champion for clinical governance, referring to leadership roles and responsibilities in quality and safety
- roles in operational areas where a mix of clinical and managerial expertise is suitable for service redesign and improvement

Recent research on medical managers in the United Kingdom (Ham et al., 2010) highlights the importance of creating conditions within the health system to attract physicians in managerial positions and of ensuring that physician executives get sufficient professional recognition and career advancement.

After the research on physician leadership roles and identities had explained what physician leadership was and how physician leaders approached this role and coped with its challenges, a third and smaller set of recent studies addressed the issue of the organizational effectiveness of introducing dual physician leadership roles. The underlying assumption behind introducing physician leadership roles is better quality care, enhanced patient safety and greater system efficiency (Kindig, 1997; Snell et al., 2011; Williams & Ewell, 1997). However, only limited empirical evidence shows that expanded or more effective physician leadership translates into healthcare improvements. A single study (Hayes et al., 2010) describes the experience of four physician leaders who were "feeling" that they had significant impact on the hospital quality agenda (because they provided input by leading quality projects, had more peer support and saw altered corporate approaches or thinking around quality). Other studies more critically question

the assumption of increased organizational effectiveness. For example, these studies observe that not much seemed to have changed in the way decisions were actually taken (Viitanen et al., 2006) or introduce the argument that the challenges entailed by dual roles (in terms of both internal identity conflicts for physician leaders and social conflicts with other actors in the organization) might hamper organizational effectiveness and efficiency in decision-making (Kippist & Fitzgerald, 2009).

Finally, a more recent series of studies attempts to push forward the reflection on physician leaders' roles and identity by investigating questions about "how to effectively facilitate physicians' engagement in leadership roles" (Snell et al., 2011). Certain authors propose organizational "solutions" (Ham et al., 2011; Snell et al., 2011) based on empirical insights. Others suggest the development of radically new perspectives for more consistent integration of physicians into leadership roles. See, for example, the conceptual works by Hoff (2001), who proposes viewing physicians as workers among other workers (as opposed to the classic views of physicians as elite professionals or as rational suppliers), or by Fulop and Day (2010) on the need to introduce an alternative view of collective and relational leadership, rather than the dominating heroic, individualistic, skill-based view.

This research echoes some of the findings noted in sections II and III.A above. Many of the role and identity conflicts derive from the fact that the role of physician leaders is still not well recognized or is sometimes misconceived. Some researchers propose formal solutions to fill this gap. Such solutions include providing more formal support and preparation in medical schools (Ham et al., 2011), enhancing organizational mechanisms through formal recognition of physician leaders' roles, offering adequate compensation and minimizing bureaucratic frustrations (Snell et al., 2011), and selectively providing tools and techniques from non-medical managers (Witman et al., 2010).

Other researchers advance more system-wide cultural solutions instead, proposing a radical change of perspective. First, according to Hoff (2001, 2003) there could be benefit in reaching beyond the sociologists' or organizational researchers' assumptions of physician-organization conflicts because maintaining this perspective may be detrimental to physician leadership and engagement. Hoff argues that we should, in both research and practice, see physicians as individuals, just like other workers, thus focusing on their agency and personal experience in shaping the meaning of work and explaining rational and non-rational behaviour that considers the varied situational and organizational variables acting on them. According to Hoff, this more fluid, less categorical view of both managerial and professional work might help surmount the "us versus them" culture that lies at the basis of role and identity conflicts in physician leaders' work.

Second, Fulop and Day (2010) argue that healthcare reforms promoting physician leadership positions are based on the following assumptions: "study and fix the person, give them a position or title, make them responsible for results." This view is shown to be inconsistent with the characteristics of professional work and leads to conflict and reluctance among physicians. As suggested earlier, these authors argue for a need to shift to post-heroic, post-individualistic views of leadership as a collective and distributed phenomenon, stretched over the work of several individuals (and emphasizing teamwork, participation and broader empowerment).

Overall, the strongest general learning that emerges from this collective pool of research is that, because of the major cultural problems posed by management–professional tensions, formal solutions (such as establishing physician leader roles) do not automatically translate into greater physician engagement in response to reform pressures for more accountability, efficiency, etc. in the healthcare system. The main need and challenge is *to bridge cultures*. In other words, establishing physician leadership roles and positions must be accompanied by careful “cultural work.”

C. Policy Implications From Research on Individual Determinants of Physician Engagement and Leadership

There is universal agreement that physician leadership is essential to ensure health system sustainability. Investments in role definitions, skills and competencies education, and physician leader evaluation programs are both timely and worthwhile.

Engaging local physician and other health system leaders to define active physician leadership gaps specific to the appropriate jurisdiction is a suitable first step. Physician leaders can and likely should play a role in system-level and organization-level management, in healthcare-specific quality improvement initiatives, and in broader social policy discussions. Each of these roles requires a functional description, with a comprehensive set of corresponding responsibilities and well-defined expectations.

Training, mentoring and ongoing peer support for physician leaders are essential. Skill attainment and maintenance is probably an outstanding need in all Canadian jurisdictions and is of keen interest to medical educators. Therefore, it may be useful to partner with other provinces, and with the Royal College of Physicians and Surgeons of Canada, to develop a physician leadership curriculum specific to the Canadian healthcare environment and/or to support the development of a national network for physician leaders and/or aspiring leaders. A low-cost, high-impact intervention worth exploring is a commitment to make role modelling and mentoring experiences available for physician leaders (and aspiring physician leaders) with non-MD health system leaders in provincial health ministries or regional health authorities.

If the main need and challenge of physician leaders in managerial roles is to bridge cultures, how might system leaders proceed to achieve this? Overall, the following implications can be derived from the review of physician roles and identities.

First, there is a need to develop formal system and organizational solutions (training in medical schools, compensation mechanisms, formal recognition, etc.) to familiarize physicians with management values and to facilitate their integration. But nothing can be achieved from these efforts without additional cultural work. This means that, at the individual level, it is important that physician leaders develop the ability to navigate different languages and create a new discourse simultaneously understandable to different audiences (Iedema et al., 2003; Llewellyn, 2001). At the system level, both research and practice might begin to frame physicians as workers among other workers (rather than simplistically dichotomizing organization versus profession) (Hoff, 2001, 2003). This recommendation is nevertheless controversial in a field where professional privilege and autonomy have high value. Establishing physician leadership positions might again be accompanied by collective, relational and distributed leadership notions (not individualist ones) (Fulop & Day, 2010).

Although cultural differences are important, some authors argue that the similarities of values among managers and physicians like altruism and patient well-being can attenuate the impact of these differences (Klopper-Kes et al., 2010; Llewellyn, 2001; Waldman & Cohn, 2008). Recent empirical research on healthcare reform in Alberta concludes that implementing collaborative strategies may favour the co-existence of different institutional logics (Reay & Hinings, 2009). A survey of clinical chiefs in Canadian hospitals in the 1990s showed that significant subgroups of physicians in leadership roles have developed dual commitments (or dual identities) to their profession and organization (Champagne, Denis, & Bilodeau, 1998; see also Hoff, 2001; Quinn, 2010). Some factors that promote the emergence of dual commitments among physicians are the absence of perceived conflicts between professional values and organizational objectives, a positive managerial experience by physicians regarding clarity of roles and responsibilities, and transparency in decision-making processes (Alexander et al., 2001; Bujak, 2003; Fitzgerald et al., 2006; Hoff, 2001; Waldman & Cohn, 2008). Chreim, Williams and Hinings (2007) and Goodrick and Reay (2010) have also emphasized the importance of broad policy influence, like professional regulations, on the emergence of new professional roles.

D. Main Messages (Individual Perspective)

- Efforts to support the development of physicians' skills and competencies in order to improve health systems need to be part of an organizational or system strategy that targets physicians within their practice context rather than only targeting individual physicians.
- The literature indicates that the roles of physician executives and leaders present dilemmas in practice, suggesting the importance of paying attention to their work experience.
- Although economic incentive is not the main driver for physician involvement in executive and leadership roles, physicians' investments in these roles should be properly compensated.

LESSONS LEARNED FOR PHYSICIAN ENGAGEMENT AND LEADERSHIP IN HEALTH SYSTEM IMPROVEMENT

Our review of the published literature on physician engagement and leadership provides a set of insights on how leaders in Canadian health systems can work to convert the expertise, influence and legitimacy of the medical profession into assets for health system improvement. We now summarize these lessons learned:

- 1) Pressures on health systems for accountability, cost containment and increased quality of care and services make inevitable greater involvement of the medical profession in organizational and system issues. One consequence of these pressures has been increasing numbers of physicians in formal leadership roles and increased expectations regarding the roles they can play in improving health systems.
- 2) Mobilizing physicians in formal leadership roles and formal decision-making or governance bodies is important but cannot by itself respond to these expectations for greater physician engagement. However, recent research focused on developing more effective practice settings (for example, high-performing clinical microsystems) suggests that structure *can* play an important role in generating physician engagement and in actualizing physician leadership. It also suggests that engaging the medical profession and developing its leadership cannot be limited to initiatives located at the strategic apex of the organization or system. The growing attention paid to team-based organizations and “teamness” exemplifies this argument. Similarly, the greater interest in high-performing clinical units (“clinical management systems,” to use Bohmer’s term) shows that structures creating greater alignment for improvement, accountability and cost containment may represent fertile ground for developing physician engagement and leadership. Nevertheless, physicians need to be properly compensated for their time and involvement in team and improvement initiatives. Trust between the organization and physicians appears fundamental to aligning physicians’ and organizational goals.

A clear lesson from this review is that structural reforms (physicians in formal executive positions, development and management of information for clinical performance, economic incentives, etc.) are insufficient for developing physician engagement and leadership at scale. More elaborate processes of engagement and leadership development at the individual, organizational and system levels may be needed to support physician involvement in system improvement.

- 3) Research on general leadership and on physician leadership for health system improvement points toward the important new view of leadership that is more collective, distributed and relational. This concept blurs the distinction between engagement and leadership per se, suggesting the need to develop more active roles for physicians in improvement initiatives. Developing clinical leaders and champions across systems can make a significant contribution to improvement. This approach to leadership is consistent with recent work on using a social movement approach to improving health systems and with approaches promoted by the Institute for Healthcare Improvement in the United States. The core idea is to spread leadership by developing group norms that support continuous improvement.

One challenge is how to develop these norms of engagement. From this review, it appears that efforts to develop new skills and competencies by training individual physicians for leadership roles, including exposing them to interprofessional experiences and cultivating dyads of physicians and managers in charge of clinical units, may support the emergence of such norms. To some extent, better recognition of physician leadership roles for system improvement can potentially support the reframing of norms and relationships between the medical profession and the system or organization. For example, using physician compacts to reframe the relations between the medical profession and the organization is one potential strategy that has been applied in the Canadian and American contexts.

However, our review suggests that greater involvement of physicians implies changes not only for the medical profession. Health systems are structured and developed around well-embedded policy and managerial logics that have fuelled a more or less distant and controversial relationship with the medical profession. Within organizations and health systems, greater physician leadership and physician engagement also require changes in the way managers and policy-makers interact and work with physicians. A focus on health system improvement probably suggests a new *modus operandi* between the system, the organization and the profession. This idea is captured somewhat in the recently developed notion of *organized professionalism*, which means that professions and organizations must mutually accommodate system changes and evolution.

- 4) This synthesis also underscores the important dilemmas that physician leaders experience in assuming new roles in organizations and systems. Such dilemmas may be partly attenuated by getting involved in *cultural work*. Cultural work implies the promotion of a new discourse at the individual level around the incorporation of organizational and system thinking as part of the “knowledge” that physicians have to incorporate in their professional “know-how.” Such incorporation will of course be performed to various degrees depending on the propensity and involvement of physicians to assume leadership roles that go beyond the usual clinical responsibilities. At more system or organizational levels, some researchers have suggested that a cultural shift toward considering physicians as workers among other workers may help in developing new norms of engagement and new leadership roles. Considering physicians or other professionals as workers may seem provocative. However, the point is to emphasize the importance of professionals’ day-to-day work experience in shaping the relationship between a profession and an organization.

This cultural shift is probably one of the biggest challenges for health systems. The exact meaning of such a shift is still to be defined and will probably vary from organization to organization and system to system. The role of professional associations and unions may be key in shaping a new deal between the medical profession, the organization and the health system. The idea behind cultural work is that professional status and autonomy must likely be rethought to support more widespread engagement and leadership of the medical profession for health system improvement. Again, this goes back to the notion of organized professionalism and to the importance of identifying strategies that simultaneously encourage the inclusion of physicians as leaders in organizations and their genuine participation in improvement initiatives. At the same time, organizations and systems may have to pay more attention to the positive experiences that physicians have in their day-to-day work in organizations.

CONCLUSIONS

The literature reviewed in this synthesis reveals growing knowledge about the dynamics of physician engagement and leadership for health system improvement. A cluster of elements that combines serious structural, cultural and operational work (real improvement initiatives and support at the clinical level) may facilitate changing norms of engagement and views of leadership within the medical profession. In addition, this review shows that relational work exemplified by the focus on developing and maintaining trust between the medical profession and organizations or systems appears fundamental to supporting the multi-faceted work that we just discussed.

Overall, our review suggests that diverse strategies and initiatives can be developed to strengthen physician engagement and leadership in Canadian health systems. These strategies must focus on developing capacities at the individual, organizational and system levels. The recognition of the importance of process elements (cultural and relational work, including the nurture of a more collective view of physician leadership) implies that, to achieve the maximum benefits of any structural changes (such as financial incentives, the design of formal leadership positions, new committee structures, etc.), increased investment in cultural and relational work will also be necessary to support engagement and leadership.

Finally, the reviewed literature indicates that physician leadership and physician engagement are probably part of a continuum and are mutually reinforced at the individual, organizational and system levels. Greater expectations of more active leadership by the medical profession for health system improvement will support the engagement of larger numbers of physicians in organizational and system affairs. More physician engagement will probably support the development of formal and informal medical leadership for improvement across health systems. These investments may partly alleviate the barriers to physician engagement and leadership and the tensions in developing new roles for the medical profession.

Some gaps exist in current knowledge. Our review highlights the need for more empirical studies on the process and practices used by organizations and systems to engage physicians and to develop physician leadership for health system transformation and improvement. More specifically, we need to understand not only the specific structural changes and leadership training efforts made in different contexts but also how these efforts link to strategies to develop facilitative environments for physician engagement and leadership. These issues emerge at four levels: the microsystem level, the organizational level, the regional or provincial level and the national level. These challenges are made even more daunting in the current policy and fiscal environment, which offers limited resources for change, often allows little structural or economic integration of physicians in healthcare organizations and can create distrust through difficult negotiations on physician compensation.

More research aiming to learn from organizations that have succeeded in creating effective physician leadership and engaging front-line physicians would provide a better understanding of appropriate and successful strategies. A broader assessment of leadership competencies and the means to foster these competencies (through both formal education programs and practice-based learning) also would be helpful. Examining the strategies used by large healthcare systems in the United States and by national programs in the United Kingdom may provide insights in the ways that organizations, regions and provinces may support a broad physician leadership and engagement strategy for Canadian healthcare.

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APPENDIX 1: DETAILED METHODOLOGY

The process for this synthesis and review of physician leadership and engagement involved the following phases:

1. In the exploratory phase, we performed an electronic search to identify papers on physician leadership and physician engagement published between 1990 and 2012 in five databases: MEDLINE, Embase, Thomson Reuters (formerly ISI) Web of Science, ABI/INFORM and Sociological Abstracts. This search revealed more published works on the theme of physician leadership (n = 1,179) and fewer on physician engagement (n = 679), as well as a diverse collection of papers in terms of scientific rigour and the quality of the publication outlet.
2. We then searched for papers through the six initial domains of inquiry identified in the research proposal: high-performing healthcare organizations, skills and competencies development for physicians, quality and safety of care, patient-centred care, health system reform/transformation, and accountability in healthcare organizations. We retrieved approximately 100 papers for each domain using defined key words.

Our exploration of the initial domains of inquiry provided the following results:

- More abstracts were identified initially for some domains: for example, “skills and competencies” and “quality and safety of care.”
 - Domains like “patient-centred care” and “health system reform/transformation” offered highly heterogeneous and potentially less valuable material, considering the focus of the review.
 - Overall, the scientific quality of published works on physician engagement and leadership varied greatly, which meant that we had to be very selective at the next stage of the review process.
3. The third step in our process consisted of a face-to-face meeting of the research team to get an overall sense of the papers identified through the different domains and the implications for developing the review. More specifically, researchers were asked to select a subset of five to 10 abstracts or papers rated as highly relevant in a subset of domains, taking into account scientific rigour and/or richness of information; to agree on a process to move forward with the review and to share some preliminary thoughts on the material; and to propose ideas for a relatively definitive framing of the domains for the final selection of abstracts.
 4. We then assessed the works collected based on abstracts in order to reject papers that would not inform the review and to relocate abstracts across the different domains if necessary (for example, abstracts related to skills and competencies were found in most of the domains). This assessment of abstracts allowed us to reframe and redefine the list of domains of inquiry. Based on the availability of evidence, we introduced three new domains (the last three listed below) and removed one of the previous ones.

Preliminary results were structured according to the new list that we developed of eight domains of inquiry: high-performing healthcare organizations; quality and safety of care/quality improvement; skills and competencies development for physician leadership; patient-centred care; health system reform/transformation; physician roles, identity and role

conflicts; physicians in organizations (including accountable care organizations); and team effectiveness. We reorganized the list of abstracts for the next review stage, using this new list of domains and without yet considering scientific rigour.

- The fifth stage consisted of rating the new list of abstracts by pairs of research team members. Each member had an average of 150 articles to review and received a list of abstracts and a review form to rate them. The following coding scale was used: (1) relevant, (2) marginally/possibly relevant, (3) not relevant, and (4) don't know. In addition, reviewers had to indicate whether the articles also were related to other domains of inquiry.

Table 1 shows the numbers and proportions of abstracts that were rated as relevant by at least one reviewer for each domain of inquiry and the ones rated by both reviewers as relevant. For abstracts for which we obtained divergent independent ratings, we resolved discrepancies through a second revision of the selected abstracts and used consensus discussions among researchers to compose the final list of abstracts/papers that would be used for the next review stage. The last column of the table presents the number and percentage of abstracts in each domain that were rated as relevant by two investigators. Abstracts in the domains of patient-centred care, quality and safety of care, and health system transformation benefited less from two independent ratings of relevancy than those in other domains. In reviewing abstracts, attention was paid to the scientific quality of the study or informative potential of a given work. For example, papers that relied strictly on professional anecdotes or normative prescriptions were excluded from the review.

Table 1. Distribution of abstracts rated as relevant by revised domains of inquiry

Domain of inquiry	Number of abstracts	Number rated as relevant by one reviewer (i.e. single rating)	Percentage selected as relevant by a single rating	Number rated as relevant by two reviewers (and percentage)
High-performing healthcare organizations	86	30	34.9%	24 (27.9%)
Quality and safety of care/quality improvement	129	30	23.3%	25 (19.4%)
Skills and competencies development for physician leadership	168	38	22.6%	38 (22.6%)
Patient-centred care	100	46	46.0%	14 (14.0%)
Health system reform/transformation	121	77	63.6%	24 (19.8%)
Physician roles, identity and role conflicts	89	44	49.4%	29 (32.6%)
Physicians in organizations (including accountable care organizations)	151	83	55.0%	32 (21.2%)
Team effectiveness	71	46	64.8%	16 (22.5%)
Total	915	394	43.1%	202 (22.1%)

6. Finally, the research team analyzed the full text of 202 papers retained for this stage of the analysis. A subset of team members integrated the material.
7. In addition, the research team performed an intermediary analytical step at mid-course of the review process to provide feedback to policy sponsors by means of a conference call. We selected five to 10 exemplary papers in each domain to generate preliminary insights and to discuss with policy sponsors the orientations of the final stage of the review. It was decided at this meeting that the review would be structured around three levels of analysis—individual, organizational and system levels—to explore the factors that influence physician engagement and leadership.
8. A roundtable with policy-makers was held at the end of the process to discuss the value of the insights gained from the synthesis and implications for the Canadian context.

APPENDIX 2: NATURE OF THE EVIDENCE

The section headings here correspond with those in the Results section of the report. Following the final review of the 202 papers selected (see Appendix 1), the research writing team reorganized the main findings from each domain of enquiry into these three broad areas: the impact of health system challenges and evolution on physician engagement and leadership; the organizational dynamics of physician engagement and leadership; and the individual determinants of physician engagement and leadership. Because the synthesis results are not presented according to the eight domains of inquiry, the references cited in Appendix 2 do not provide an exhaustive list of the papers rated as relevant by reviewers. Moreover, the results include some additional contributions from the research team and references from the grey literature.

I Impact of Health System Challenges and Evolution on Physician Engagement and Leadership

This first section includes 40 papers. Thirteen papers consist of analytical empirical studies: four papers based on survey design (Boerner & Dutschke, 2008; Caldwell et al., 2008; Vina et al., 2009; Williams & Ewell, 1996) and nine qualitative papers based on case study research or in-depth interviews to probe specific aspects of physician engagement and leadership (Denis, Lamothe, & Langley, 2001; Denis, Langley, & Cazale, 1996; Engstrom & Axelsson, 2010; Ong & Schepers, 1998; Paulus, Davis, & Steele, 2008; Quaye, 1997) and the impact of organizational contexts on professional status (Exworthy et al., 2003; Kitchener, Coronna, & Shortell, 2005; Macintosh, Beach, & Martin, 2012).

The papers vary in quality and analytical depth. One paper has empirical content but is limited to describing an experience mainly from a professional perspective (McCutcheon, 2009). Fifteen papers fall in the category of informed essays that develop key themes around physician integration within organizations based on an analysis of existing literature (Bohmer, 2012; Clark, 2012; Dye, 1996; Edmonstone, 2009; Fulop & Day, 2010; Gilmore, 2010; Kirkpatrick et al., 2012; Kocher & Sahni, 2010; LeTourneau & Fleischauer, 1999; Porter & Teisberg, 2007; Puckett, 1998; Schneller et al., 1997; Singer & Shortell, 2011; Souba, 1996; Starr, 1992). One paper is a review (of 14 published studies) on the implementation of quality management systems in hospitals, focusing partly on the role of physician involvement (Wardhani et al., 2009). We examined 10 conceptual papers to understand the underlying institutional logics and pressure that influence physician leadership and engagement in organizations (Adler, Kwon, & Heckscher, 2008; Ferlie et al., 1996; Friedland & Alford, 1991; Freidson, 1985; Gouldner, 1957; Lounsbury, 2007; Quinn, 1992; Reay & Hinings, 2009; Salter, 2001; Tuohy, 1999).

II Organizational Dynamics of Physician Engagement and Leadership

In this section, we included 83 papers. In particular, we selected 26 papers from the literature on physicians in organizations, 16 from the domain of team effectiveness, 26 from the quality and safety domain, and seven papers from the grey literature. We also identified eight additional papers as relevant for this section.

Forty-two papers report the results of analytical empirical studies. Of these, 17 studies are based on survey or archival design (Albert, Sherman, & Backus, 2010; Alexander et al., 2001;

Blumenthal & Edwards, 1995; Boerner & Dutschke, 2008; Burns, Andersen, & Shortell, 1989; Caldwell et al., 2008; Dunham, Kindig, & Schulz, 1994; Goes & Zhan, 1995; Goodall, 2011; Lammers et al., 1996; O'Reilly et al., 2010; Shortell et al., 2000; Spurgeon, Mazelan, & Barwell, 2011; Vina et al., 2009; Weiner, Shortell, & Alexander, 1997; Zimmerman et al., 1993; Zuckerman et al., 1998), and 16 studies are based on case study research or in-depth interviews to probe specific aspects of physician engagement and leadership. Seven of the case studies are linked to the health system challenges and evolution that impact physician engagement and leadership (Bradley et al., 2001, 2006; Buchanan, Fitzgerald, & Ketley, 2007; Denis et al., 1996, 2001; Fitzgerald et al., 2006; Taitz, Lee, & Sequist, 2012). Four other case studies relate to the contribution of physician engagement and physician leadership to quality improvement initiatives, the design and implementation of hospital quality and patient safety agendas, and the measurement of quality improvement (Epstein & Bard, 2008; Hayes et al., 2010; Hockey & Bates, 2010; Wolfson et al., 2009). Two other papers contain a framework for quality improvement based on experiences and research trials or studies (Solberg, 2007) or reflecting developments in the United States and the United Kingdom (Ferlie & Shortell, 2001). Three other articles present qualitative studies promoting clinical involvement that includes team development (Howard et al., 2012; Reader, Flin, & Cuthbertson, 2011; Sarcevic et al., 2011). In addition, nine papers have empirical content and normative work but are limited to a description of experience mainly from a professional perspective (Becher & Chassin, 2002; Brand et al., 2007b; Clark, Spurgeon, & Hamilton, 2008; Denis, Langley, & Rouleau, 2010; Duvalko, Sherar, & Sawka, 2009; Feldman et al., 2006; Goode et al., 2002; Maddux et al., 2008; O'Hare & Kudrle, 2007).

Twenty-seven papers fall in the category of informed essays, including 11 that develop key themes around physician integration within organizations. Eight papers focus on quality and safety improvement and the challenge to reduce costs and improve quality of care (Byrnes, 2007; Dowton, 2004; Enthoven, 1990; Goeschel et al., 2010; Hanchak, 1996; Irvine, 2001; Kirkpatrick et al., 2012; Reinertsen, 1998). Six papers represent informed opinions or viewpoints of authors about physician involvement and developing new competencies and skills in leaders (Alvarez, Svejnova, & Vives, 2007; Bohmer, 2012; Brand et al., 2007a; Butcher, 2012; Clark, 2012; Shumway, 2004). Thirteen of these essays are conceptual works with deeper analysis written by credible leaders in the field (Denis, Langley, & Rouleau, 2005; Gronn, 2002; Hackman & Wageman, 2005; Heinemann, & Zeiss, 2002; Kocher & Sahni, 2010; Porter & Teisberg, 2007; Raelin, 2005; Robinson, 1997; Singer & Shortell, 2011) or by well-informed professionals (Baker & Denis, 2011; Day, 2007; O'Sullivan & McKimm, 2011; Swanwick & McKimm, 2011).

Seven papers in this section contain extensive reviews of studies on physicians' integration in healthcare organizations and systems, on the role of physicians in promoting team effectiveness or on determinants of quality management systems implementation (Burns & Muller, 2008; Denis et al., 2011; Elward et al., 1994; Jain et al., 2008; Majmudar et al., 2010; Wardhani et al., 2009; Weller et al., 2010).

Another seven papers from the grey literature are about building physician engagement based on opinions and experiences (Dickson, 2012; Dickson, Tholl, & PHSI Partners, 2012; Greer, 2008; Holmes & Chu, 2012; Kaissi, 2012; Metrics@Work Inc., Grimes, & Swettenham, 2012; MSEQWG, 2012). These studies provide information on barriers and facilitators for physician engagement as well as specific recommendations to enhance and understand the dynamic driving

physician engagement based on another literature review (of international grey literature and peer-reviewed articles) on the subject.

III Individual Determinants of Physician Engagement and Leadership

A. Skills and Competencies Development

In the skills and competencies domain, there are few robust, scientific studies. The majority of the literature is expert commentary complemented by some case studies of varying rigour (Hayes et al., 2010; Leape, 2006; Litaker, Ruhe, & Flocke, 2008; Longo, 2007; Margolis et al., 2010; Parand et al., 2010), a couple of qualitative interview-based studies (Hamilton et al., 2008; Taylor, Taylor, & Stoller, 2009) and a small collection of systematic reviews (Busari, Berkenbosch, & Brouns, 2011; Stoller, 2008). We also included practices in interested international jurisdictions in this section (Hamilton et al., 2008; Kirkpatrick et al., 2012; O'Sullivan & McKimm, 2011). Unique to this domain are several proposed competency frameworks and a collection of program and curriculum descriptions. Unfortunately, although some of the competency frameworks have been validated, few described curricula have been formally evaluated (Baker, 2003).

B. Development and Dilemmas of Physician Leadership Roles and Identities

We included 18 papers in this domain. Fourteen are empirical studies, of which eight are analytical (five case studies and three interview-based studies) and six are descriptive (four descriptive surveys and two accounts of empirical experiences). We also found two conceptual papers providing insights from analysis of previous work on the phenomenon (Fulop & Day, 2010; Hoff, 2001). Finally, two informed comments by expert practitioners in the field, not grounded in strong evidence but on practical experience (Gilmore, 2010; Kindig, 1997), seemed worthy of analysis.

