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Developing Canadian physician: the quest for leadership effectiveness

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Abstract

Purpose – The purpose of this study is to discern the physicians' perception of leadership effectiveness in their clinical and non-clinical roles (leadership) by identifying their political skill levels.

Design/methodology/approach – A sample of 209 Canadian physicians was surveyed using the Political Skills Inventory (PSI) during the period 2012-2014. The PSI was chosen because it assesses leadership effectiveness on four dimensions: social astuteness, interpersonal influence, networking ability and apparent authenticity.

Findings – Physicians in clinical roles' PSI scores were significantly lower in all four PSI dimensions when compared to all other physicians in non-clinical roles, with the principal difference being in their networking abilities.

Practical implications – More emphasis is needed on educating and training physicians, specifically in the areas of political skills, in current clinical roles if they are to assume leadership roles and be effective.

Originality/value – Although this study is located in Canada, the study design and associated findings may have implications to other areas and countries wanting to increase physician leadership effectiveness. Further, replication of this study in other settings may provide insight into the future design of physician leadership training curriculum.

Keywords Management effectiveness, Networks, Political skills, Physician leadership, Clinical leadership

Paper type Research paper

Introduction

Physician leadership in Canada appears to be in crisis. Nova Scotia, for example, has deemed that health system needs and health outcome standards are not being met because of diminished physician leadership capacity (Health Association Nova Scotia, 2012). Frich *et al.* (2015), note that many experts call for leadership development as a means to strengthen the leadership skills and competencies of

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physicians. Many physicians have become leaders "accidentally" by being promoted into influential leadership roles without the need of associated leadership development to be effective (Chaudry *et al.*, 2008; Clark and Armit, 2010; Fulop and Day, 2010). Active cultivation of future leaders is, thus, required (Ackerly *et al.*, 2011). The Alberta Health Governance Review Task Force (2013) recommends that the health care system properly train physicians and give them opportunities to gain experience in multidisciplinary teams and leadership positions. This will ensure that they are better prepared for effective participation in teams and for succession to leadership positions. However, physician leadership development in Canada is not typically a planned component of physician training, thus potential physician leaders may not have regular opportunities to learn how to deal with the complex organizational issues involved in assuming managerial responsibility (Bhugra, 2005; Wadoo *et al.*, 2010). As noted by Collins-Nakai (2006), physicians believe that there is both a need and a void for leadership development. Many physicians recognize the need for physicians to enter into leadership roles and assume leadership responsibilities; however, they have made clear that they believe that these skills have not been adequately taught or cultivated to this point in time; these skills are necessary to deal with the complex health care environment (Collins-Nakai, 2006).

Complexity is a characteristic of not just clinical work but also of the entirety of the health care system (Stoller, 2009). This is due to four key factors as argued by Stoller (2009):

(1) the external environment in which Canadian health care professionals work (insurance, regulation, etc.);

(2) the new technologies that are continuously and dynamically developed;

(3) the diversity of professionals and specialists involved; and

(4) the goals of service delivery are multiple and potentially competing e.g. the tensions between expense, clinical care, and patient quality (876).

This widespread and compounding complexity ensures that all health care workers, clinicians and physicians alike are presented with similar problems. Notwithstanding, this paper will seek to review leadership through the lens of physicians.

A number of competency frameworks to guide and measure the efficiency of physician leaders have emerged, including the Canadian Medical Education Directives for Specialists (CanMEDS) Physician Competency Framework (Frank, 2005), Lead Self, Engage Others, Achieve Results, Develop Coalition, Systems Transformation (LEADS) in a Caring Environment Capabilities Framework (Dickson and Tholl, 2011) and the Pan-Canadian Health Leadership Capability Framework (Dickson, 2007). Table I provides a brief overview of these frameworks. Other authors have identified general skill sets for physician leaders (Table II). Until 2015, in fact, CanMEDS did not include being a leader in its model. Since then, however, CanMEDS has added leadership as a key attribute for physicians. The inclusion of leadership in CanMEDS provides a degree of context to the importance of leadership as a skill all physicians must exhibit. Further, The Association of Faculties of Medicine of Canada noted in a report on medical education that although the curricula of medical schools in Canada is presently loaded, they acknowledge and call for change to this traditional style of education to incorporate

Table I.
Frameworks for competency

CanMEDS Physician Competency Framework (Royal College of Physicians and Surgeons of Canada, 2015)	The Pan-Canadian Health Leadership Capability Framework (5 C's), 2007 Canadian Health Services Research Foundation	LEADS in a Caring Environment Framework (CCHL, CHLNet), 2006
Medical Experts Practice medicine within their defined scope of practice and expertise Perform a patient-centered clinical assessment and establish a management plan Plan and perform procedures and therapies for the purpose of assessment and/or management Establish plans for ongoing care and, when appropriate, timely consultation Actively contribute, as an individual and as a member of a team providing care, to the continuous improvement of health care quality and patient safety	*Champion caring* Inspire and encourage a commitment to health (II) Show respect for the dignity of all persons and act with compassion (AA) Exhibit fairness and a sense of justice (AA)	*Lead Self: self-motivated leaders...* Are self-aware (SA) Manage themselves (SA) Develop themselves (SA) Demonstrate character (AA)
Communicator Establish professional therapeutic relationships with patients and their families (SA) Elicit and synthesize accurate and relevant information, incorporating the perspectives of patients and their families Share health care information and plans with patients and their families Engage patients and their families in developing plans that reflect the patient's health care needs and goals (SA) Document and share written and electronic information about the medical encounter to optimize clinical decision-making, patient safety, confidentiality and privacy	*Cultivate self and others* Demonstrate self-awareness and self-management; enable others to grow (SA) Exhibit character: honesty, integrity, optimism, confidence and resiliency (AA) Create engaging environments where people have meaningful opportunities to contribute (II) (SA)	*Engages Others: engaging leaders...* Foster development of others Contribute to the creation of healthy organizations Communicate effectively (II) Build teams (SA) (II)

(*continued*)

Table I.

CanMEDS Physician Competency Framework (Royal College of Physicians and Surgeons of Canada, 2015)	The Pan-Canadian Health Leadership Capability Framework (5 C's), 2007 Canadian Health Services Research Foundation	LEADS in a Caring Environment Framework (CCHL, CHLNet), 2006
Collaborator Work effectively with physicians and other colleagues in the health care professions (NA) Work with physicians and other colleagues in the health care professions to promote understanding, to manage differences and to resolve conflicts (SA) Hand over the care of a patient to another health care professional to facilitate continuity of safe patient care	*Connect with others* Communicate effectively with a wide variety of stakeholders (SA) Build effective multi-disciplinary teams Develop networks, coalitions and partnerships and navigate socio-political environments (NA)	*Achieve results: goal-oriented leaders...* Set direction Strategically align decisions with vision, values and evidence Take action to implement decisions Assess and evaluate
Leader Contribute to the improvement of health care delivery in teams, organizations and systems (II) Engage in the stewardship of health care resources Demonstrate leadership in professional practice Manage career planning, finances and health human resources in a practice	*Create results* Develop a shared vision and translate it into action; hold themselves and others accountable for results (II) Integrate quality improvement and evidence into decision-making Manage resources responsibly and creatively	*Develop coalitions: collaborative leaders...* Purposefully build partnerships and networks to create results (NA) Demonstrate a commitment to customers and service Mobilize knowledge (NA) Navigate socio-political environments (NA)(AA)(SA)

(*continued*)

Table I.

CanMEDS Physician Competency Framework (Royal College of Physicians and Surgeons of Canada, 2015)	The Pan-Canadian Health Leadership Capability Framework (5 C's), 2007 Canadian Health Services Research Foundation	LEADS in a Caring Environment Framework (CCHL, CHLNet), 2006
Health Advocate Respond to an individual patient's health needs by advocating with the patient within and beyond the clinical environment (NA) Respond to the needs of the communities or populations they serve by advocating with them for system-level change in a socially accountable manner	*Change systems* Build personal and organizational understanding of the complexity of health systems; mobilize knowledge to challenge processes and guide change (NA) Lead changes consistent with vision, values and a commitment to health Orchestrate changes to improve health service delivery	*Systems transformation: successful leaders...* Demonstrate systems/critical thinking Encourage and support innovation Orient themselves strategically to the future Champion and orchestrate change
Scholar Engage in the continuous enhancement of their professional activities through ongoing learning Teach students, residents, the public and other health care professionals Integrate best available evidence into practice Contribute to the creation and dissemination of knowledge and practices applicable to health		

(*continued*)

CanMEDS Physician Competency Framework (Royal College of Physicians and Surgeons of Canada, 2015)	The Pan-Canadian Health Leadership Capability Framework (5 C's), 2007 Canadian Health Services Research Foundation	LEADS in a Caring Environment Framework (CCHL, CHLNet), 2006
Professional Demonstrate a commitment to patients by applying best practices and adhering to high ethical standards Demonstrate a commitment to society by recognizing and responding to societal expectations in health care Demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulation Demonstrate a commitment to physician health and well-being to foster optimal patient care	Statements in boldface reflect the following dimensions of political skills from the PSI: SA–social astuteness II–individual influence NA–networking ability AA–apparent authenticity	

Table I.

General attributes (Singleton, 1997)	Additional attributes (Wadoo *et al.*, 2010)
Hands-on operations experience Financial and accounting expertise Strategic planning, business development and marketing skills	*Demonstrating personal qualities* Developing self-awareness Managing yourself Continuing personal development Acting with integrity
Knowledge of staffing and human resource functions Managed care contracting experience and knowledge of current industry and regional trends	*Working with others* Developing networks Building and maintaining relationships Encouraging contribution Working within teams
Information systems and vendor relations Training and experience and ability to implement these programs Data tracking, analysis, and implementation	*Improving services* Ensuring patient safety Critically evaluating Encouraging improvement and innovation Facilitating transformation
Strong physician relations skills and an ability to develop rapport with and/or educate physicians; *Effective communication and strong negotiation skills* An entrepreneurial mindset and the ability to take decisive action (as well as risks) Continuous learning and a desire to stay abreast of marketplace changes	*Setting direction* Identifying the contexts for change Applying knowledge and evidence Making decisions Evaluating impact
	Managing services Planning Managing resources Managing people Managing performance

Table II.
Physician leadership skills

more competency-based learning and leadership development within medical education (2012). Importantly, this means that medical schools believe that there needs to be a change in skills learned throughout medical education and, as such, recognize that medical school curricula need to be changed to promote the skills that physicians need to be successful presently and in the future (AFMC, 2012).

Despite these viable competency-based frameworks and identified skill sets, the overall lack of strong physician leadership remains (Health Association Nova Scotia, 2012; Carruthers and Swettenham, 2011), suggesting that a new approach to assessing physician leadership skills is needed. Although physician leadership is recognized as a key skill for the success of physicians at working in the more collaborative and integrated environment that now exists, leadership training has little integration in either the curricula of medical schools or the residency or fellowship stages of the

education process (Frugé *et al.*, 2010; DeVaul *et al.*, 1993). This interaction among various specialties and professions has led to a great deal of tension when reforming the roles and training of medical actors in comparable jurisdictions (the UK, Australia and New Zealand) and, thus, has led to a greater deal of importance placed on physicians taking leadership role, especially in clinical roles (Degeling *et al.*, 2003). Although these teams are emerging, physicians are not being provided with the skills to lead these teams (Morse, 2010). As noted by DeVaul *et al.* (1993), medical schools have been experimenting with the inclusion of leadership in curricula for over 20 years, yet there has been little consensus or widespread integration of leadership training throughout the education of physicians in that time period.

One of the first steps is to better understand what physicians and physician leaders need to become more effective leaders. However, physician leaders' self-assessment of their efficacy is virtually unstudied in Canada (Collins-Nakai, 2006).

In this research study, a novel approach is taken to the task of assessing physician leadership. The objective is to discern physicians' perceptions of leadership effectiveness in clinical roles and non-clinical roles (leadership) by identifying their political skill levels. Political skills can be defined as the "ability to understand others at work and to use that knowledge to influence others to act in ways that enhance one's personal and organizational agendas" (Ferris *et al.*, 2005b, p. 27), a valuable set of skills for physicians' thrust into leading complex organizations in a still more complex health system. Political skill assessments have been used in other research studies to investigate the influence of such skills on leadership outcomes. Braddy and Campbell (2013) find that effective leaders use political skills to maximize and leverage work relationships in the private sector. Further, their results indicate that leaders with better political skills tend to receive higher leadership, or job, approval ratings from their co-workers compared to leaders with less political skills. Douglas and Ammeter (2004) find that leaders in the education sector that score high on network building – one of several dimensions of political skill identified in the literature – positively affect both the perceptions of leader performance and the objective measure of unit performance. Broadly, the literature suggests that political skills permit leaders to exert greater influence on others and help their work teams increase their efficiency and productivity (Ferris *et al.*, 2005a). This study provides important insight into how physician leaders rate their leadership using the lens of political skills.

Methods

A sample of 209 Canadian physicians was surveyed using the Political Skills Inventory (PSI) during the period of 2012-2014. Physicians were surveyed at annual physician leadership conferences and at physician management institutes and Canadian Medical Association courses. The PSI was chosen because it assesses leadership effectiveness on four dimensions: social astuteness, interpersonal influence, networking ability and apparent authenticity. A good overview of this study instrument and process is found in Ferris *et al.* (2005b), where they define political skill as the "ability to understand others at work and to use that knowledge to influence others to act in ways that enhance one's personal and organizational agendas" (p. 127) and note that politically skilled individuals combine social astuteness with the capacity to adjust their behavior to different and changing situational demands. Politically skilled leaders are adept at reading others' behaviors and motives, influencing others to achieve important goals,

building diverse relationship networks and interacting genuinely and sincerely with others. These skills enable leaders to maximize and leverage their relationships to perform efficiently and effectively at work. Furthermore, political skill is characterized as being essential for successfully dealing with the political realities of organizations (Ferris *et al.*, 2005b). The PSI has established the boundaries of its construct domain, its construct validity and initial empirical evidence for criterion-related validity (Ferris *et al.*, 2005b; Ahearn *et al.*, 2004; Semadar *et al.*, 2006).

In our study, physician leaders' effectiveness was assessed using the four dimensions of PSI presented in Ferris *et al.* (2005b):

(1) *Social astuteness*: It is the ability to understand social interactions and interpret your own and others' behavior well. Such high self-awareness allows identification with others to obtain desired outcomes.

(2) *Interpersonal influence*: This dimension can be seen as flexibility, that is, the ability to adapt your behavior to influence a desired response from different people in diverse situations.

(3) *Networking ability*: It is the ability to develop diverse contacts, networks and friendships which have a mutually beneficial nature. People in these networks tend to hold assets/influence; hence, politically skilled individuals find themselves well positioned to take advantage of opportunities when they arise.

(4) *Apparent sincerity*: Individuals high on this dimension are described by others as having integrity and being authentic. This is a critical element of political skills, as attempts to influence will fall on deaf ears when individuals are perceived as having ulterior motives.

A rating on a seven-point scale, where 1 = strongly disagree and 7 = strongly agree, was used by participants to self-assess their degree of conformity to 18 statements included in the PSI. Questions related to each PSI dimension were totaled; a high score in any dimension represents higher political ability in that dimension. Data on general demographics and answers to open-ended questions on leadership observations were also collected.

As one of the primary research objectives was to discern which factors determine the political skills of physicians in clinical roles and of physician leaders, linear regression was used to model the mean scores of all survey participants. This model incorporates the following co-variants: gender, role, age, years in health care, years in current role and if the participant was still practicing. A backward selection was applied to select the most significant predictors of the mean scores. The threshold for dropping a variable from the model was $p = 0.05$. The co-variant "role" was found to be significantly different across all roles. The data were analyzed in Statistical Analysis System (SAS) version 9.2.

Results

Figure 1 shows that physicians in non-clinical roles (non-PICR; PICR – physicians in clinical roles; 71 per cent of participants) held senior positions in the Canadian health system, such as Chief Executive Officers (CEOs), presidents and vice presidents (e.g. Vice Dean, Vice President (VP) Medical and Academic Affairs, VP Medical Affairs, VP Medicine and President of Medical Staff), whereas examples of directors' positions included Director General, Director Medical Programs, Director of Medical Education,

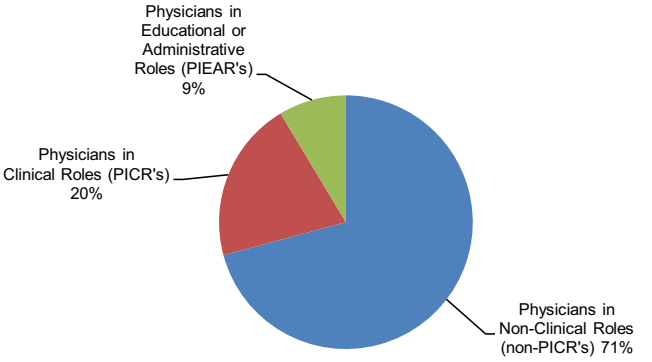

Figure 1.
Participant roles (n = 209)

Director of Professional Affairs, Executive Director Medical Affairs, Executive Medical Director, Medical Director, Department Head, Medical Director Laboratories, Medical Leader, Medical Program Director, Program Medical Director, Program Medicine Director, Senior Medical Director and Site Director. Chiefs and Deputy Heads were represented by Chief Medical Officers, Associate Chief Clinical Officer, Site Chief, Division Head, etc.

PICR positions included anesthesiologists, clinicians, emergency physicians, family physicians, rural family physicians, lead physicians, family health teams, physician leads, physician leader continuing cares, physician/surgeons, psychiatrists, lead surgeons and urologists.

Physicians in educational or administrative roles (PIEAR) positions included academic curriculum coordinators, assistant professors, associate professors, and deputy registrars, professional development leads, education committee members, professors and professors of surgery.

Across the board (Table III), most participants reported their primary place of work to be hospitals (PICR – 65 per cent; non-PICR – 57 per cent; and PIEAR – 28 per cent).

Participant place of employment	Physicians in clinical roles (PICR; %)	Physicians in non-clinical roles (non-PICR; %)	Physicians in educational or administrative roles (PIEAR; %)
Academic	2	7	6
Community	7	3	6
Family	16	2	11
Federal	0	2	11
Health authority	0	14	17
Hospital	65	57	28
Medical association	0	5	6
Military	0	1	0
N/A	0	1	11
Primary care network	0	1	0
Provincial	9	6	6

Note: n = 209

Table III.
Participant work locations

PICR also worked in family practices (16 per cent) and provincial government departments (9 per cent). In addition to hospitals, non-PICR also worked at health authorities (14 per cent) and academic institutions (7 per cent). PIEAR were located at health authorities (17 per cent), family practices and federal agencies (11 per cent).

Across all three categories, medical doctors and physicians were the most frequently reported areas of specialty (Table IV). PICR also specialized in pediatrics, family practice, pathology, surgery, anesthesia, psychiatry, radiology, etc. Non-PICR also specialized in cardiology, emergency medicine, general practice, obstetrics/gynaecology, geriatrics and internal medicine. The areas of specialty of PIEAR included family practice and psychiatry.

Mean scores (Table V) differed by roles ($p < 0.001$). In our study, PICR have significantly lower scores than the other two categories combined. This is confirmed by a t-test, which yields a p-value of <0.001.

PICR were compared with non-PICR on their age, number of years in health care, number of years in current role and gender using t-test (Table VII). The number in parentheses (Table VI) is standard deviation. No difference was found on age and gender. However, PICR have been in their roles almost twice as long as the others (Table VII), but not much difference can be found between their ages or health care years (ages and health care years are actually smaller in the physician group). This could imply that leaders in the non-PICR group are more likely to have recent changes/promotion in their careers; PICR are not seeking or being approached for

Table IV. Participant area of specialty

	Physician	(%)
Physicians in clinical roles (PICR)	116	59
Physicians in non-clinical roles (non-PICR)	33	17
Physicians in education or administrative roles (PIEAR)	12	76

Notes: $n = 198$; 11 did not complete all details

Table V. Regression on mean scores

Title/Role	N	Mean	SD
Chief/Deputy Chief/Head	71	5.68	0.5
Director	54	5.51	0.58
Education and administration	15	5.76	0.46
Physician in clinical role	42	5.23	0.61
President/CEO/VP	22	5.96	0.5

Table VI. Demographics summary

	Physicians in clinical roles (PICR)	Physicians in non-clinical roles (non-PICR)	p-value
Age	46.21 (10.2)	50.15 (8.7)	0.0124
Number of years in health care	19.68 (11.42)	23.11 (9.08)	0.08
Number of years in current role	9.35 (7.56)	4.77 (6)	<0.001
Female	52.38%	42.33%	0.297

leadership roles, or physicians seek more time in clinical practice before heading into leadership roles.

How physicians in clinical roles self-report their political skills on four dimensions

Given that the overall PSI mean scores (Table V) for each participant category were statistically different, the next step was to compare political skill dimensions for PICR and non-PICR. The four dimension-specific average scores were compared again using the *t*-test, and PICR have significantly lower scores in all four dimensions (Figure 2) than all non-PICR. The most significant difference can be found in the dimension of networking ability ($p = 0.001$). Individual scores for each question were compared for the PICR and non-PICR (Table VI) using the Wilcoxon rank sum test. Based on the integer value of the questions, the Wilcoxon test was the most appropriate choice. The significant (different) questions are italicized in Table VIII.

In general, a PSI dimension score of 1 or 2 is considered low; 3, 4 or 5 is considered average; and 6 or 7 is considered fairly high (Ferris *et al.*, 2005b). Referring to Table IX, Questions 5, 7, 16, 17 and 18 measure social astuteness, namely, having a high degree of self-awareness and discernment in social settings. Questions 2, 3, 4 and 12 measure interpersonal influence, namely, the ability to have a powerful effect on those with whom one works. Questions 1, 6, 9, 10, 11 and 15 measure networking ability, namely, being able to successfully build an effective an advantageous partnership with others at work. Questions 8, 13 and 14 assess apparent sincerity, namely, possessing or appearing to possess authenticity, genuineness and integrity.

Among PICR, the question with the highest score is q8 – apparent sincerity (6.43) – and the question with lowest score is q17 – social astuteness (4.33). Among physicians in leadership roles, the question with highest score is q13 – social astuteness (6.62) – and the

Dimension	Group	Mean	STD	*p*-value
Social	PICR	4.98	0.86	0.011
	Other	5.33	0.77	
Interpersonal	PICR	5.48	0.77	0.006
	Other	5.8	0.63	
Network	PICR	4.76	1.1	<0.001
	Other	5.41	0.85	
Sincerity	PICR	6.25	0.49	0.034
	Other	6.51	0.49	

Table VII.
Mean scores by dimensions

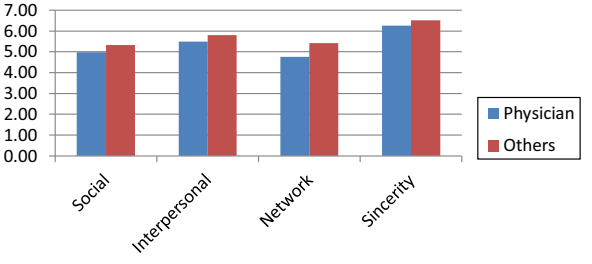

Figure 2.
Mean scores by dimensions

Table VIII.
Comparison at question level

Social	Interpersonal	Network	Sincerity
q5 I understand people very well	*q2 I am able to make most people feel comfortable and at ease around me*	*q1 I spend a lot of time and effort at work networking with others*	*q8* When communicating with others, I try to be genuine in what I say and do
q7 I am particularly good at sensing the motivations and hidden agendas of others	*q3 I am able to communicate easily and effectively with others*	*q6 I am good at building relationships with influential people at work*	*q13 It is important that people believe I am sincere in what I say and do*
q16 I have good intuition and am savvy about how to present myself to others	q4 It is easy for me to develop good rapport with most people	*q9 I have developed a large network of colleagues and associates at work who I can call on for support when I really need to get things done*	q14 I try to show a genuine interest in other people
q17 I always seem to instinctively know the right things to say or do to influence others	q12 I am good at getting people to like me	*q10 At work, I know a lot of important people and am well-connected*	
q18 I pay close attention to people's facial expressions		*q11 I spend a lot of time at work developing connections with others*	
		q15 I am good at using my connections and network to make things happen at work	

question with lowest score is q17 – social astuteness (4.84). Overall, the question with highest score is q8 – apparent sincerity (6.54) – and the question with lowest score is q17 – social astuteness (4.74). PICR are seen to have lower mean scores than all others in all four dimensions and scored significantly worse in all networking-related questions. This lack of networking ability appears to be the main reason for lower scores among PICR.

Within-category differences for physicians in non-clinical roles: role years and age effect

Given the lower networking skills among PICR, the mean scores and networking abilities of Chief/DChief/Head, Director and CEO/President by age (Table X) are compared, and a difference is found among them. For directors, the 41-50 age group has the lowest mean score and >60 years has the highest. For Chief/DChief/Head, the pattern is reversed. Also, a long role year is associated with lower scores in both groups. As such, the two main conclusions for this analysis are that:

(1) a long role year is associated with lower scores; and

(2) seniority plays different roles in Director, Chief/DChief/Head and President/CEO.

Given that PICR scored lower in their networking ability, a question to ask is "among non-PICR, what role does networking play?" Three groups were considered in this sub-analysis: Director, Chief/Deputy Chief/Head and President/CEO/VP (Table IX). The "Other" category, because of its lack of unique characteristics, consists of subjects who did not fit into any other categories. Therefore, they are not included in the analysis.

Compared to Chief/DChief/Head, Directors are significantly older and have worked longer in health care. However, their scores were (almost significantly) lower. The same pattern can be observed if President/CEO/VP and Chief/DChief/Head are compared. These results appear to indicate that as Director and President/CEO/VP age increases, both their mean scores and networking abilities increase. The opposite is true of Chief/DChief/Head – longer role years equate to their lowest networking scores.

A closer look reveals a different pattern of age effect in Director vs Chief/DChief/Head. Their ages were grouped into four categories: <40, 41-50, 51-60 and >60. For

	Director			Chief/DChief/Head			CEO, President and VP		
Age	Overall PSI mean	Network	Role years	Overall PSI mean	Network	Role years	Overall PSI mean	Network	Role years
<=40	5.56	5.98	2.2	5.56	5.25	2.84	6.42	6.5	2
41-50	5.1	5.43	7.73	5.78	5.54	4.78	5.67	5.52	2.9
51-60	5.59	5.58	4.94	5.7	5.43	4.58	6.1	5.94	5.89
>60	5.8	6.13	4.2	5	4.75	7	6.33	7	Missing

Table IX. Age summary for physicians in leadership roles (PILR)

	Physicians					
Age	Mean score	Social	Interpersonal	Network	Sincerity	Role years
<=40	5.19	4.8	5.63	4.64	6.25	4.71
41-50	5.24	5.25	5.55	*4.53*	6.2	9.79
51-60	5.26	4.8	5.42	4.99	6.33	11.19
>60	5.22	4.6	4.5	5.75	6.17	35

Table X. Age summary for PICR

Directors, the 41-50 group had the lowest mean score, whereas the >60 years group scored the highest. For Chief/DChief/Head, the pattern was reversed, with the highest mean score in the 41-50 group and lowest in the >60 years group.

Within-category differences for physicians in clinical roles: role years and age effect

The same analyses done for non-PICR, noted previously, were conducted for PICR (Table X). No difference was found in the mean scores across the four age groups. However, when their performance is observed by dimension, the >60 years group shows lower interpersonal scores but higher networking skills. The other groups had higher interpersonal scores but lower networking skills. There was no difference in the sincerity scores among the four age groups.

Interpretation

Conceptual summary

Our research study seeks to learn more about the effectiveness of physicians and physician leaders' leadership through self-assessment of their political skill levels. Prior research studies discovered that the synergies of the four PSI domains are found in effective leaders. If transformation in Canadian health care is to succeed, the health care sector must have competent leaders. If Canada continues to place physicians in leadership roles, those physicians will need to acquire political skills to be effective leaders with influence. Unpacking the four dimensions of political skills through a specific assessment process, PSI, provides a valuable evaluation mechanism that could identify the level of these skills and potentially identify leadership areas that need further development. Future areas of focus would be to understand how to develop, hire and promote physician leaders based on their political skills, as well as other skills and competencies, and also to initiate stronger leadership development in practicing physicians and during medical school training.

Explanation of findings

PICR PSI scores were significantly lower in all four PSI dimensions when compared to all other physicians in clinical roles, with the principal difference being in their networking abilities. This might be due to their lack of formal leadership training and experience and mean that PICR are not seeking or being approached for leadership roles or that physicians seek more time in clinical practice before heading into leadership roles. Physician age and role years appear to play a factor. This may imply that leaders in the non-PICR group are more likely to have recent changes/promotion in their careers.

Limitations and strengths

A main limitation of this study is the relatively small number of physicians (clinical/leaders) represented and the fact that the study is exploratory. Furthermore, the nature of the sample presents a limitation that although from various conferences and seminars, it is still composed of physicians already taking part in leadership conferences and seminars.

Conclusion and implications for practice, policy and future research

Our findings indicate that much work must be done to ensure that the requisite political skills are developed by physicians. Our most important finding is that PICR

score significantly lower on all four PSI dimensions than other physicians. Clearly, more emphasis is needed on educating or training PICR if they are to assume leadership roles. As reviewed in this paper, research has been done on the importance of leadership as a skill, however, little to no work has been done on the actual effectiveness of leadership programs and policies or how effective current physicians leaders are in practicing leadership as a skill. Our findings present an interesting starting point to where the next phase of research can take place. There needs to be a concerted effort to investigate the actual effectiveness, not necessarily the importance of leadership as a skill.

To improve physician leadership, both policy and practice need to change. Currently, most medical schools produce clinicians, not clinician-leaders, and health care organizations have not prioritized leadership development for physicians. Further, policy changes governing medical education need to change, and leadership training is required in all phases of physicians' studies and careers. Such policies can extend to accreditation being contingent on fellows' and residents' involvement in leadership seminars led by experienced faculty (Frugé *et al.*, 2010); medical credits being awarded for involvement in leadership programs, seminars and conferences being extended to physicians; adjusting leadership program's goals to align with the practical and self-reflective nature of leadership (Frich *et al.*, 2015); ensuring the interaction between physicians, specialists and different professional groups (Frich *et al.*, 2015); collaborative partnerships between medical schools, doctor's associations and medical authorities; and/or ensuring that all physicians, current leaders or otherwise partake in leadership seminars, conferences and programs to improve the core skills and reasoning associated with leadership. These exemplify that there are options within medical schools, outside of medical schools or between management bodies for leadership training. By including these in already present programs and methods, leadership training can be incorporated without leading to an over-encumbrance of medical students or physicians in their training. There is little consensus on when it is best to train these physicians leaders, however. The study by Dela Cruz *et al.* (2014) supports this conclusion as they note that although strong leadership is necessary, there is little in the way of best practices for developing this leadership and, as such:

> […] future studies need to include robust study designs, outcome evaluations, and objective long-term measurements, if we are to improve or understanding of the best pedagogy to equip physicians with leadership skills.

From this, we conclude that it is key to study, through evaluating outcomes, the best practices for developing effective physician leaders.

From this research and the possible courses of action stated above, there are two distinct streams of leadership development that emerge. The first is cultivating leaders in and throughout medical education (i.e. schooling, residency and fellowship). The second is that there can be ongoing training for physicians later in their career (i.e. through leadership conferences or the incorporation of leadership in the ongoing professional development of physicians). These options, although in-depth examination is needed, are a strong starting point that enables medical schools, the medical profession and medical associations to partake and cultivate in leadership development. However, the best practice for this might be to construct

partnerships across the life of physicians. This could contain organizations such as the Canadian Medical Association (CMA) and Health Authority and a medical association such as Doctors Nova Scotia in the Nova Scotian context. Further research is needed to understand if these options would impact the actual effectiveness of leadership in physicians; however, continual support of physicians through the noted partnerships is a model currently in place and one that warrants more exploration in the future to gauge effectiveness of these initiatives.

Future research also needs to further understand:

- why PICR scored significantly lower in all four domains;
- why all participants' lowest scores were in the domain of social astuteness; and
- the age effect both in terms of means scores and networking abilities of non-PICR.

If it is assumed that physicians in clinical practice and in training will be future leaders in the Canadian health care system, then a focused, proactive approach will be needed to prepare them. Medical school training must make this a priority. In the future, leadership development should focus on increasing physicians' capacity in all political skill dimensions with particular emphasis on networking abilities.

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