ASSOCIATION MÉDICALE CANADIENNE | CANADIAN MEDICAL ASSOCIATION

BACKGROUND TO CMA POLICY

PHYSICIAN HEALTH

See also CMA Policy on Physician Health

In recent decades there has been growing recognition of the impact of physician health on systemic outcomes and patient-care.[1,2] Physician health encompasses the prevention and treatment of acute or chronic issues of individual physicians, as well as the optimization of of interconnected physical, mental and social factors to support health and wellness.[3] It is also being increasingly understood as a set of risk-management practices aimed at shifting perceptions of health from being an individual (private) matter to more of a shared resource.[4] In Canada evidence for this includes the use of strategies adapted from organizational psychology and occupational medicine to change physician behaviour, as well as intensified oversight by professional bodies, and the inclusion of maintaining personal health as a core competency for physicians.[4,5] Despite concerted efforts to promote and protect the health and wellness of physicians, the collective state of physician health remains a significant threat to the viability of Canada's health system.[1] Physician distress is emerging as an important quality indicator in medical practice,[4,6] and both individual- and system-level factors are well-established contributors to compromised physician health.[2,7] As such, the advancement of a model of shared responsibility — targeting the relative roles of individual physicians and system-level influencers[8] — represents a robust response to this reality.

1. The state of learner and physician health

Poor health may develop before or during training and persist into medical practice. Medical school and residency training are particularly challenging times, when a myriad of competing personal and professional demands threaten learner health. In Canada, it has been reported that most students suffer from at least one form of distress over the course of their training[9,10] and recent national data point to higher rates compared to their age and education-matched peers. With respect to burnout, characterized by a high level of emotional exhaustion and/or high level of depersonalization (at least weekly), overall rates are reportedly 37%.[11,12] Similarly higher levels of depression, anxiety and burnout are reported among American medical students than in the general population.[13]

While both residents and physicians are reported to be physically healthier than the general population, their mental and social health are cause for concern.[1,14] Compared with the general population, physicians are at a higher risk of experiencing adverse outcomes such as depression and burnout[15,16] – the latter of which is nearly twice as common among physicians compared with workers in other fields, even after adjusting for age, sex, education level, relationship status, and work hours.[17] Results from the 2017 CMA National Physician Health Survey[18] showed that 49% of residents and 33% of physicians screened positive for depression, and high burnout rates were reported in 38% of residents 29% of physicians. Furthermore, although the mental health, addiction and substance-use problems, including alcohol, among physicians are not dissimilar to those in the general population, the abuse of prescription drugs (e.g., opioids) is reportedly higher.[1,19] Although most physicians referred to monitoring programs have been diagnosed with substance use disorders, an increasing number are being referred for recurrent mood disorders, often stemming from workplace concerns.[20,21]

1.1 Contributing factors

Adverse health outcomes among learners and physicians are linked to a range of contributing factors, including intrinsic ones (e.g., personality characteristics[22] and other personal vulnerabilities) and extrinsic ones (e.g., excessive workloads, excessive standards of training and practice, excessive duty hours, lack of autonomy, disruptive behaviour, poor work-life integration, increasing demands with diminishing resources, systemic failures, financial issues, and the practice and training environment).[2,15,23]

Moreover, the management of risk that many physicians are involved with as it relates to the treatment and management of their patients can be challenging and impacts their health[4]. A dearth of recent data on the health status of physicians in Canada represents a critical gap in knowledge and limits future efforts to refine, select and assess initiatives.

2. Consequences

2.1. Impact on learners and physicians

Compromised physician health can result in decreased personal and professional satisfaction, dysfunctional personal and professional relationships, increased attrition and increased rates of suicide and suicidal ideation.[6,24,25] Perhaps most troubling, completed suicide rates among physicians are 1.4-2.3 times higher than in the general population – between 300 and 400 physicians annually in the United States.[26] In Canada, suicidal ideation among physicians (including residents) has been recently reported at 19% (lifetime) and 9% (in the last year)[18], while Canadian medical student data report 14% (lifetime) and 6% (in the last year).[11] Overall, ideation rates are higher among both physicians and learners than in the general population.[27]

2.2. Impact on patient care

The impact of the mental and physical health of physicians extends to the quality of care provided to patients.[16,28,29] For instance, physicians suffering from burnout are reportedly two to three times more likely to report their conduct with their patients as sub-optimal.[24] Indeed, physicians remain a primary source of health information for patients, and they act as both role models and health advocates.[15] Characteristics of burnout (e.g., poor communication and reduced empathy) run counter to the core principles of patient-centred care,[30] and physicians who maintain healthy lifestyles are more likely to focus on preventive strategies with their patients.[31,32] Although deficits in physician health can negatively affect patient care, it is notable that evidence linking the health of physicians to medical errors is incomplete, if not difficult to establish. Nevertheless, studies have reported a relationship between medical error and specific adverse outcomes such as burnout.[17,33]

2.3 Impact on health system

Issues that are associated with compromised physician health, such as reduced productivity, increased turnover, absenteeism and the likelihood of early retirement,[25,34] contribute to the strained state of the health system. Given that physicians represent a significant proportion of the Canadian medical workforce, more attention must be paid to physician health if the health system is to be sustainable.[2] Encouragingly, studies have shown that resources and services such as workplace wellness programs produce investment returns,[35,36] such as decreases in medical leave and absenteeism[2,36,37] Implementing strategies from occupational medicine are also being increasingly employed to ensure patient safety when doctors return to work after illness.[4] This contributes to helping balance the need of institutions and medical regulatory agencies to minimize the risk while maximizing quality of patient care, with the desire of individual physicians to help their patients while leading healthy, fulfilling lives.[4]

Although there are moral grounds for addressing physician and learner ill-health, an economic case can also be made to support and guide initial and ongoing investment to address the problem.[7,18] In navigating the many external challenges facing the Canadian the health system, it is critical that system-level leaders not neglect internal threats, including physician distress and dissatisfaction[6,7], and challenges in navigating complex work environments.[24] To this end, although there are many positive and supportive elements within medical culture, it is also important to acknowledge aspects that contribute to poor health.

2.4 Impact on the culture of medical practice and training and on the workplace

Enduring norms within the culture of medicine are directly contributing to the deterioration of the health of Canadian learners and physicians.[2] Culturally rooted impediments, such as the reluctance to share personal issues or admit vulnerability, discourage the medical profession from acknowledging, identifying and addressing physician health issues.[7] Physicians and learners alike face pressure not to be ill, to care for patients regardless of their personal health and even to attempt to control their own illness and treatment by self-medicating.[1,38] Indeed, physicians are often portrayed as

being invincible professionals who put patient needs above all else, including their own needs.[39,40]

Although the CMA Code of Ethics encourages physicians to seek help from colleagues and qualified professionals when personal or workplace challenges compromise patient care[41] physicians tend to delay or avoid seeking treatment, especially for psychosocial or psychiatric concerns. Moreover, nearly 33% of Canadian physicians are not registered with a family physician.[42] which means they are among the lowest users of health services.[43] Providing care to physician colleagues is both complex and challenging, yet this is an area where formal training has not been explicitly or systematically provided on a national scale.[1] There is a need to identify physicians willing to treat colleagues, to develop or adapt existing approaches that encourage help-seeking and to help physicians to navigate the treatment of colleagues.

Stigma around mental health within medical practice and training acts as a significant barrier to early intervention.[1,44] In a localized study of Canadian physicians, 18% reported distress, but only 25% considered getting help and only 2% actually did.[39] Similarly, national CMA data reported that 'feeling ashamed to seek help' was identified (76%) as a major reason for physicians *not* wanting to contact a physician health program.[18] Indeed, common concerns include not wanting to let colleagues or patients down, believing seeking help is acknowledging weakness, being apprehensive about confidentiality, and fearing negative reprisals (e.g., from colleagues, supervisors, regulatory bodies, other licence-granting bodies, insurers)[1,45] Fear of retribution is also a frequent reason why physicians may feel hesitant to report impaired colleagues, even if supportive of the concept.[46]

From the outset of training, medical learners are introduced to system-wide cultural aspects and values of the medical profession, which they then internalize and pass on to others.[2] Extensive literature on the "hidden curriculum" points to a performance culture that includes norms such as the view that adversity is character building and the valorization of emotional repression (e.g., mental toughness).[2,47] Culture-related issues are being increasingly addressed as a function of medical professionalism. For instance, commitment to physician health, collegiality and support have been established as key competencies within the Professional Role of the CanMEDS Framework,[5] the most widely accepted and applied physician competency framework in the world.[48] This involves a commitment to exhibiting self-awareness and managing influences on personal well-being and professional performance; managing personal and professional demands for a sustainable practice throughout the physician life cycle, and promoting a professional culture that recognizes, supports, and responds effectively to colleagues in need. In support of these commitments to personal care, physicians must develop their capacity for self-assessment and monitoring, mindfulness and reflection, and resilience for sustainable practice.[5]

Intra-professionalism, characterized by effective clinical and personal communication among physicians,[49] significantly influence job satisfaction, which in turn has been shown to predict physician health outcomes.[50] Furthermore, peer support can buffer

the negative effects of work demands;[39] collegial, professional environments are known to be healthier for both providers and patients.[51] Conversely, unprofessional behaviour is associated with physician dissatisfaction,[50] and dysfunctional workplaces and poor collegiality are linked to burnout.[52] Unprofessional workplace behaviour is tolerated, and in fact is often customary, within medical training and practice environments.[53]

Of particular concern, such behaviour carried out by more senior physicians has been shown to encourage similar conduct among learners,[54] highlighting the importance of promoting effective professional role modelling.[55] Unfortunately, poor supervisory behaviour, and even mistreatment of learners, is common within the medical training environment.[56] Although expectations for professional behaviour are increasingly being incorporated into both undergraduate and postgraduate teaching, issues related to a lack of professionalism persist in both training and practice.[51] System-wide efforts are needed to counter what is perceived to be an eroding sense of collegiality and to promote professionalism as a way to address physician burnout and enhance engagement.[7,39]

3. Treatment and preventive approaches

3.1 Physician health services

The scope of physician health services has expanded from focusing primary focus on identifying treating and monitoring physicians with substance abuse issues to more recent efforts to de-stigmatize poor physician health and integrate proactive resources to complement tertiary approaches.[1] In Canada, there are multiple services to support the health needs of learners and physicians. These can be conceptualized along a continuum of approaches,[1] including the following: health-promoting environments (e.g., efforts to ensure balanced workloads, provide more support staff, and encourage physicians to make sure they get adequate exercise, nutrition and sleep in training and practice); primary prevention (e.g., resilience training, stress-reduction groups, fatigue management programs, strategies to enhance teamwork and collaborative care); secondary prevention (e.g., access to assessment and counselling; services and workshops on coping with adverse events, litigation and career transitions and on managing difficult behaviour); and tertiary prevention (e.g., more intensive outpatient counselling, inpatient treatment). Many of these approaches, including those at the system level, focus on assisting the individual physician rather than addressing more contextual issues.

Most jurisdictions in Canada have consolidated a number of services under the banner of a provincial physician health program (PHP).These range from counselling, treatment and/or peer support to fitness-to-practice and return-to-work assessments, workplace behaviour management and relationship management. The services available to physicians in a given area vary greatly.[1,15] More established and resourced programs often offer services across the continuum, while less established programs tend to focus on secondary and tertiary services.[2] Provincial PHPs have been shown to produce positive outcomes[1,20,21,48] and are generally considered to be effective in addressing

user issues,[57] however but many physicians remain reluctant to access them.[58] In addition to provincial programs, many learners and physicians in Canada can access support and treatment from other sources, including medical school and faculty wellness programs, employee assistance or workplace programs, and more individual-led options such as physician coaches.[1] There has been a steady accumulation of evidence on the positive returns of workplace health and wellness programs,[35] as well as indications that even modest investments in physician health can make a difference.[17]

In response to challenges posed by the considerable diversity in the organizational structure of provincial PHPs, the ways in which PHPs classify information, the range of services they offer, the mechanisms of accountability to stakeholders and the manner in which they pursue non-tertiary activities (e.g., education and prevention work)[59] a consortium of PHPs released a preliminary Descriptive Framework for Physician Health Services in Canada in 2016. Through this framework a series of core services (and modes of activity within each) were defined.[59] Potential users of the framework include PHPs, academic institutions, medical regulators, national associations, hospitals and health authorities, as well as other local groups. The framework may serve a range of purposes, including program reviews and planning, quality improvement, resource allocation, advocacy, stakeholder consultation and standards development.[59] Initiatives such as this framework help address a persistent gap in Canada around equity of and access to services. Overall, fulfilling the needs of all learners and physicians through enhanced service quality and functional equivalence is an ongoing challenge for provincial PHPs and other service providers, and it must be a priority moving forward.

3.2 Individual primary prevention

Prevention and promotion activities can help mitigate the severity and decrease the incidence of adverse outcomes associated with physician health issues among learners and physicians.[3] Although secondary and tertiary services are critical components of any health strategy, complementary, proactive, preventive initiatives promote a more comprehensive approach. Some of the best-documented strategies include attuning to physical health (e.g., diet, exercise, rest), psychosocial and mental health (e.g., mindfulness and self-awareness, resilience training, protecting and maintaining cultural and recreational interests outside of medicine, and protecting time and relationships with family and friends).[60] For instance, resilience has been identified as an indicator of physician wellness[61] and as a critical skill for individuals working in health care environments.[39] Innovative, coordinated approaches such as resilience and mindfulness training are instrumental in helping physicians overcome both anticipated and unexpected difficulties, to position them for a sustainable career in medicine.

Many internal (e.g., personal) and external (e.g., occupational) factors can interfere with a physician's capacity to consistently maintain healthy lifestyle behaviours and objectively attend to personal health needs. Although the emergence of individually targeted proactive and preventive activities is encouraging, a greater focus on system-

level initiatives to complement both proactive and tertiary approaches is needed. This also aligns with recent CMA member data indicating that medical students (61%), residents (55%), physicians (43%) and retired physicians (41%) want more access to resources to ensure their emotional, social and psychological well-being.[62] Such an approach is increasingly important in light of physicians' professional responsibility to demonstrate a commitment to personal health.[5]

4. Physician health as a shared responsibility

Although physicians are a critical component of Canadian health systems, those systems do not necessarily promote health in the physician community. It cannot be overstated that many health challenges facing learners and physicians are increasingly systemic in nature.[1] Despite increasing challenges to the cultural norm that health-related issues are an individual-physician problem,[2] system-level factors are often ignored.[1,7] Although solutions targeted at the individual level (e.g., mindfulness and resilience training) are important proactive approaches and are a common focus, they often do not address occupational and organizational factors.[7] Intervention exclusively at the individual level is unlikely to have meaningful and sustainable impacts. Interventions targeting individual physicians are likely most effective when paired with efforts to address more systemic (e.g., structural and occupational) issues.[63] Moreover, organization-directed interventions have been shown to be more effective in reducing physician burnout than individual-directed interventions, and meaningful reductions in negative outcomes have been linked to system-level interventions.[22,34]

Concerted efforts at the system level will ultimately drive substantive, meaningful and sustainable change. This includes coordination among leaders from national, provincial and local stakeholders as well as individual physicians.[16,22,64] Potential influencers include medical schools and other training programs, regulatory bodies, researchers (and funding bodies), professional associations and other health care organizations, as well as insurers.[1] Indeed, addressing the complex array of issues related to physician health is a shared responsibility. A clear mandate exists to guide individuals and leaders in promoting and protecting the health of learners and physicians.[1,7]

5. Conclusion

Physician health is a growing priority for the medical profession. Medical practice and training present complex occupational environments[34], in which leaders play a central role in shaping training, practice and organizational culture through the implicit and explicit ways in which they communicate core values.[2] When promoting physician health across the career lifecycle it is also important to consider the unique challenges and experiences of physicians who are not actively practicing (e.g., on leave; have non-clinical roles) as well as those who are retired.

Notwithstanding the impact on patient care or health systems, promoting the health of individual physicians and learners is in and of itself worthy of attention. Indeed, leaders in the health system have a vested interest in helping physicians to meet the personal and professional challenges inherent in medical training and practice as well as in promoting positive concepts such as wellness and engagement.[7] The increasingly blurred lines between physician health, professionalism and the functioning of health systems[40] suggest that leaders at all levels must promote a unified and progressive vision of a healthy, vibrant and engaged physician workforce. This involves championing health across the career life cycle through advocacy as well as promoting solutions and outcomes through a lens of shared responsibility at both individual and system levels. Broad solutions skewed towards one level, without requisite attention given to the other level, are unikely to result in meaningful change. Moving from rhetoric to action, this next frontier integrates the promotion of self-care among individuals, support for healthy and supportive training and practice environments – both physical and cultural – as well as continued innovation and development of (and support for) physician health services. This constellation of efforts will ultimately contribute to the success of these actions.

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REFERENCES

[1] Canadian Medical Association (CMA). *Physician health matters: A mental health strategy for physicians in Canada*. Ottawa: CMA; 2010. Available: https://www.cma.ca/Assets/assets-library/document/en/practice-management-and-wellness/Mentalhealthstrat_final-e.pdf (accessed 2017 Oct 30).

[2] Montgomery AJ. The relationship between leadership and physician well-being; A scoping review. *Journal of Healthcare Leadership* 2016;55:71-80. Available: http://www.ingentaconnect.com/content/doaj/11793201/2016/00000055/00000001/art00010 (accessed 2017 Oct 30).

[3] World Medical Association (WMA). *WMA Statement on physicians well-being*. France: WMA; 2015 Oct. Available: https://www.wma.net/policies-post/wma-statement-on-physicians-well-being/ (accessed 2017 Oct 30).

[4] Albuquerque J, Deshauer D. Physician health: beyond work-life balance. *CMAJ* 2014;186:E502-503. Available: https://doi.org/10.1503/cmaj.140708 (accessed 2017 Oct 30).

[5] Frank JR, Snell L, Sherbino J, Royal College of Physicians and Surgeons of Canada (RCPSC). *CanMEDS 2015 physician competency framework*. Ottawa: RCPSC; 2015. Available: http://canmeds.royalcollege.ca/uploads/en/framework/CanMEDS%202015%20Framework_EN_Reduced.pdf (accessed 2017 Oct 30).

[6] Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. *Lancet* 2009;374:1714-21. Available: https://doi.org/10.1016/S0140-6736(09)61424-0 (accessed 2017 Oct 30).

[7] Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: Nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin Proc* 2017;92:129-6. Available: https://doi.org/10.1016/j.mayocp.2016.10.004 (accessed 2017 Oct 30).

[8] Lemaire JB, Wallace JE. Burnout among doctors. *BMJ* 2017;358:j3360.

[9] Tepper J, Champion C, Johnston T, Rodin D, White A, Bastrash M, et al. *Medical student health and wellbeing.* Ottawa: Canadian Federation of Medical Students (CFMS); 2015.

[10] Dyrbye LN, Harper W, Durning SJ, Moutier C, Thomas MR, Massie FS, et al. Patterns of distress in US medical students. *Med Teach* 2011;33:834-9. Available: https://doi.org/10.3109/0142159X.2010.531158 (accessed 2017 Oct 30).

[11] Canadian Federation of Medical Students (CFMS). *CFMS-FMEQ national health and wellbeing survey – Student research position*. International Conference on Physician Health; 2016 Sep 18-20; Boston. Ottawa: CFMS; 2016.

[12] Maser B, Houlton R. *CFMS-FMEQ national health and wellbeing survey: Prevalence and predictors of mental health in Canadian medical students*. Canadian Conference on Physician Health; 2017 Sep 7-9; Ottawa. Ottawa: CFMS; 2017.

[13] Dyrbye LN, Thomas MR, Massie FS, Power DV, Eacker A, Harper W, et al. Burnout and suicidal ideation among US medical students. *Ann of Intern Med* 2008;149:334-41. Available: https://doi.org/10.7326/0003-4819-149-5-200809020-00008 (accessed 2017 Oct 30).

[14] George S, Hanson J, Jackson JL. Physician, heal thyself: a qualitative study of physician health behaviors. *Acad Psychiatry* 2014;38:19-25. Available: https://doi.org/10.1007/s40596-013-0014-6 (accessed 2017 Oct 30).

[15] Roman S, Prévost C. Physician health: state of knowledge and preventive approaches. Montreal: Programme d'aide aux médecins du Québec (PAMQ); 2015. Available: http://catalogue.cssslaval.qc.ca/GEIDEFile/Doc_224290_ang.pdf?Archive=102463592064&File=Doc_224290_Ang_pdf (accessed 2017 Oct 30).
[16] West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet* 2016;388:2272-81. Available: https://doi.org/10.1016/S0140-6736(16)31279-X (accessed 2017 Oct 30).
[17] Shanafelt T, Goh J, Sinsky C. The business case for investing in physician well-being. *JAMA Intern Med* 2017 Sep 25 [epub ahead of print]. Available: https://doi.org/10.1001/jamainternmed.2017.4340 (accessed 2017 Oct 30).
[18] Simon C, McFadden T, Canadian Medical Association (CMA). *National Physician Health Survey: The Process, Preliminary Data, and Future Directions 2017*. Canadian Conference on Physician Health; 2017 Sep 7-9; Ottawa. Ottawa: CMA; 2017.
[19] Lefebvre LG, Kaufmann IM. The identification and management of substance use disorders in anesthesiologists. *Can J Anaesth* 2017;64:211-8. Available: https://doi.org/10.1007/s12630-016-0775-y (accessed 2017 Oct 30).
[20] Albuquerque J, Deshauer D, Fergusson D, Doucette S, MacWilliam C, Kaufmann IM. Recurrence rates in Ontario physicians monitored for major depression and bipolar disorder. *Can J Psychiatry* 2009;54:777-82. Available: https://doi.org/10.1177/070674370905401108 (accessed 2017 Oct 30).
[21] Brewster JM, Kaufmann IM, Hutchison S, MacWilliam C. Characteristics and outcomes of doctors in a substance dependence monitoring programme in Canada: prospective descriptive study. *BMJ* 2008;337:a2098.
[22] Lemaire JB, Wallace JE, Sargious PM, Bacchus M, Zarnke K, Ward DR, et al. How attending physician preceptors negotiate their complex work environment: A collective ethnography. *Acad Med* 2017 Jun 20 [epub ahead of print]. Available: http://journals.lww.com/academicmedicine/Abstract/publishahead/How_Attending_Physician_Preceptors_Negotiate_Their.98194.aspx (accessed 2017 Oct 30).
[23] Lemaire JB, Wallace JE. How physicians identify with predetermined personalities and links to perceived performance and wellness outcomes: a cross-sectional study. *BMC Health Serv Res* 2014;14:616. Available: https://doi.org/10.1186/s12913-014-0616-z (accessed 2017 Oct 30).
[24] Shanafelt TD, Sloan JA, Habermann TM. The well-being of physicians. *Am J Med* 2003;114:513-9.
[25] Dewa CS, Jacobs P, Thanh NX, Loong D. An estimate of the cost of burnout on early retirement and reduction in clinical hours of practicing physicians in Canada. *BMC Health Serv Res* 2014;14:254. Available: https://doi.org/10.1186/1472-6963-14-254 (accessed 2017 Oct 30).
[26] Andrew LB. Physician suicide: Overview, depression in physicians, problems with treating physician depression. New York: Medscape; 2017 Jun 12. Available: https://emedicine.medscape.com/article/806779-overview#a3 (accessed 2017 Oct 30).
[27] Dyrbye LN, West CP, Satele D, Boone S, Tan L, Sloan J, *et al.* Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med* 2014;89:443-51. Available: https://doi.org/10.1097/ACM.0000000000000134 (accessed 2017 Oct 30).
[28] de Oliveira GS, Chang R, Fitzgerald PC, Almeida MD, Castro-Alves LS, Ahmad S, et al. The prevalence of burnout and depression and their association with adherence to safety and practice standards: a survey of United States anesthesiology trainees. *Anesth Analg* 2013;117:182-93. Available: https://doi.org/10.1213/ANE.0b013e3182917da9 (accessed 2017 Oct 30).
[29] Shanafelt TD, Mungo M, Schmitgen J, Storz KA, Reeves D, Hayes SN, et al. Longitudinal study evaluating the association between physician burnout and changes in professional work effort.

Mayo Clin Proc 2016;91:422-31. Available: https://doi.org/10.1016/j.mayocp.2016.02.001 (accessed 2017 Oct 30).
[30] Kitson A, Marshall A, Bassett K, Zeitz K. What are the core elements of patient-centred care? A narrative review and synthesis of the literature from health policy, medicine and nursing. *J Adv Nurs* 2013;69:4-15. Available: https://doi.org/10.1111/j.1365-2648.2012.06064.x (accessed 2017 Oct 30).
[31] Cameron D, Katch E, Anderson P, Furlong MA. Healthy doctors, healthy communities. *J Ambul Care Manage* 2004;27:328-38.
[32] Lobelo F, de Quevedo IG. The evidence in support of physicians and health care providers as physical activity role models. *Am J Lifestyle Med* 2016;10:36-52.
[33] Shanafelt TD, Balch CM, Bechamps G, Russell T, Dyrbye L, Satele D, et al. Burnout and medical errors among American surgeons. *Ann Surg* 2010;251:995-1000. Available: https://doi.org/10.1097/SLA.0b013e3181bfdab3 (accessed 2017 Oct 30).
[34] Panagioti M, Panagopoulou E, Bower P, Lewith G, Kontopantelis E, Chew-Graham C, et al. Controlled interventions to reduce burnout in physicians: A systematic review and meta-analysis. *JAMA Intern Med* 2017;177:195-205. Available: https://doi.org/10.1001/jamainternmed.2016.7674 (accessed 2017 Oct 30).
[35] Chenevert D, Tremblay MC. Analyse de l'efficacité des programmes d'aide aux employés : Le cas du PAMQ. Montreal: HEC Montreal; 2016. Available: http://www.professionsante.ca/files/2016/07/Rapport-Chenevert-VF.pdf (accessed 2017 Oct 30).
[36] Morneau Shepell Ltd. *Workplace mental health priorities report 2015*. Toronto: Morneau Shepell Ltd.; 2015. Available: https://www.morneaushepell.com/ca-en/insights/workplace-mental-health-priorities-report (accessed 2017 Oct 30).
[37] Baicker K, Cutler D, Song Z. Workplace wellness programs can generate savings. *Health Aff (Millwood)* 2010;29:304-11. Available: https://doi.org/10.1377/hlthaff.2009.0626 (accessed 2017 Oct 30).
[38] Harrison J. Doctors' health and fitness to practise: The need for a bespoke model of assessment. *Occup Med (Lond)* 2008;58:323-7. Available: https://doi.org/10.1093/occmed/kqn079 (accessed 2017 Oct 30).
[39] Wallace JE, Lemaire J. On physician well being—you'll get by with a little help from your friends. *Soc Sci Med* 2007;64:2565-77. Available: https://doi.org/10.1016/j.socscimed.2007.03.016 (accessed 2017 Oct 30).
[40] Lesser CS, Lucey CR, Egener B, Braddock CH, Linas SL, Levinson W. A behavioral and systems view of professionalism. *JAMA* 2010;304:2732-7. Available: https://doi.org/10.1001/jama.2010.1864 (accessed 2017 Oct 30).
[41] Canadian Medical Association (CMA). *CMA code of ethics*. Ottawa: CMA; 2004. Available: https://www.cma.ca/Assets/assets-library/document/en/PD04-06-e.pdf (accessed 2017 Oct 30).
[42] ePhysician Health. Primary care: Physician patient module. Ottawa: ePhysician Health; 2017. Available: http://ephysicianhealth.com/ (accessed 2017 Oct 30).
[43] Sibbald B, Bojke C, Gravelle H. National survey of job satisfaction and retirement intentions among general practitioners in England. *BMJ* 2003;326:22.
[44] Thompson WT, Cupples ME, Sibbett CH, Skan DI, Bradley T. Challenge of culture, conscience, and contract to general practitioners' care of their own health: qualitative study. *BMJ* 2001;323:728-31.
[45] Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. *JAMA* 2010;304:1181-90. Available: https://doi.org/10.1001/jama.2010.1300 (accessed 2017 Oct 30).
[46] DesRoches CM, Rao SR, Fromson JA, Birnbaum RJ, Iezzoni L, Vogeli C, et al. Physicians' perceptions, preparedness for reporting, and experiences related to impaired and incompetent

colleagues. *JAMA* 2010;304:187-93. Available: https://doi.org/10.1001/jama.2010.921 (accessed 2017 Oct 30).
[47] Gaufberg EH, Batalden M, Sands R, Bell SK. The hidden curriculum: what can we learn from third-year medical student narrative reflections? *Acad Med* 2010;85:1709-16. Available: https://doi.org/10.1097/ACM.0b013e3181f57899 (accessed 2017 Oct 30).
[48] Dupont RL, Skipper GE. Six lessons from state physician health programs to promote long-term recovery. *J Psychoactive Drugs* 2012;44:72-8. Available: https://doi.org/10.1080/02791072.2012.660106 (accessed 2017 Oct 30).
[49] Beaulieu M-D, Samson L, Rocher G, Rioux M, Boucher L, Del Grande C. Investigating the barriers to teaching family physicians' and specialists' collaboration in the training environment: a qualitative study. *BMC Med Educ* 2009;9:31. Available: https://doi.org/10.1186/1472-6920-9-31 (accessed 2017 Oct 30).
[50] Van Ham I, Verhoeven AAH, Groenier KH, Groothoff JW, De Haan J. Job satisfaction among general practitioners: a systematic literature review. *Eur J Gen Pract* 2006;12:174-80. Available: https://doi.org/10.1080/13814780600994376 (accessed 2017 Oct 30).
[51] Bahaziq W, Crosby E. Physician professional behaviour affects outcomes: a framework for teaching professionalism during anesthesia residency. *Can J Anaesth* 2011;58:1039-50. Available: https://doi.org/10.1007/s12630-011-9579-2 (accessed 2017 Oct 30).
[52] Cydulka RK, Korte R. Career satisfaction in emergency medicine: the ABEM Longitudinal Study of Emergency Physicians. *Ann Emerg Med* 2008;51:714-722.e1. Available: https://doi.org/10.1016/j.annemergmed.2008.01.005 (accessed 2017 Oct 30).
[53] Doja A, Bould MD, Clarkin C, Eady K, Sutherland S, Writer H. The hidden and informal curriculum across the continuum of training: A cross-sectional qualitative study. *Med Teach* 2016;38:410-8. Available: https://doi.org/10.3109/0142159X.2015.1073241 (accessed 2017 Oct 30).
[54] Case GA. Performance and the hidden curriculum in Medicine. *Performance Research* 2014;19:6-13. Available: https://doi.org/10.1080/13528165.2014.947120 (accessed 2017 Oct 30).
[55] Schneider B, Barbera KM. *The Oxford handbook of organizational climate and culture*. Oxford: Oxford University Press; 2014.
[56] Cook AF, Arora VM, Rasinski KA, Curlin FA, Yoon JD. The prevalence of medical student mistreatment and its association with burnout. *Acad Med* 2014;89:749-54. Available: https://doi.org/10.1097/ACM.0000000000000204 (accessed 2017 Oct 30).
[57] Canadian Medical Protective Association (CMPA). *Physician health: Putting yourself first*. Ottawa: CMPA; 2015 Sep. Available: https://www.cmpa-acpm.ca/en/advice-publications/browse-articles/2015/physician-health-putting-yourself-first (accessed 2017 Oct 30).
[58] Givens JL, Tjia J. Depressed medical students' use of mental health services and barriers to use. *Acad Med* 2002;77:918-21.
[59] Canadian Medical Foundation (CMF). *A descriptive framework for physician health services in Canada: A report prepared by the tricoastal consortium for the Canadian Medical Foundation.* Ottawa, CMF, 2016 May. Available: http://medicalfoundation.ca/wp-content/uploads/2016/09/7.b-TCC-Descriptive-Framework-Survey-Companion-FINAL-May-24-2016.pdf (accessed 2017 Oct 30).
[60] Epstein RM, Krasner MS. Physician resilience: what it means, why it matters, and how to promote it. *Acad Med* 2013;88:301-3. Available: https://doi.org/10.1097/ACM.0b013e318280cff0 (accessed 2017 Oct 30).
[61] Zwack J, Schweitzer J. If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians. *Acad Med* 2013;88:382-9. Available: https://doi.org/10.1097/ACM.0b013e318281696b (accessed 2017 Oct 30).
[62] Canadian Medical Association (CMA). *CMA Baseline 2014: Overall findings report*. Ottawa: CMA; 2014.

[63] Ruotsalainen JH, Verbeek JH, Mariné A, Serra C, et al. Preventing occupational stress in healthcare workers. *Sao Paulo Medical Journal* 2016;134:92-92. Available: https://doi.org/10.1590/1516-3180.20161341T1 (accessed 2017 Oct 30).
[64] Shanafelt TD, Dyrbye LN, West CP. Addressing physician burnout: The way forward. *JAMA* 2017;317:901-2. Available: https://doi.org/10.1001/jama.2017.0076 (accessed 2017 Oct 30).