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When physicians are unwell, the performance of health-care systems can be suboptimum. Physician wellness might not only benefit the individual physician, it could also be vital to the delivery of high-quality health care. We review the work stresses faced by physicians, the barriers to attending to wellness, and the consequences of unwell physicians to the individual and to health-care systems. We show that health systems should routinely measure physician wellness, and discuss the challenges associated with implementation.

Introduction

“Healthy citizens are the greatest asset any country can have.”

Sir Winston Churchill

Physicians are important citizens of health-care systems, and evidence indicates that many physicians are unwell. Physicians who are affected by the stresses of their work may go on to experience substance abuse, relationship troubles, depression, or even death.^{1–4} Results of emerging research show that physicians’ stress, fatigue, burnout, depression, or general psychological distress negatively affects health-care systems and patient care.^{5–12} Thus when physicians are unwell, the performance of the health-care system can be suboptimum. The corollary is that physician wellness might not only benefit the individual physician, but also be vital to the delivery of high-quality health care.^{5,8}

We use the term wellness to capture the complex and multifaceted nature of physicians’ physical, mental, and emotional health and wellbeing. Much research reports physicians’ distress or ill health in terms of burnout (when individuals feel emotionally overwhelmed by the demands of their job), emotional exhaustion or withdrawal, fatigue, depression, anxiety, suicide, substance abuse, or impairment. We also consider the positive side of being well;^{5,13} Shanafelt and colleagues¹⁴ noted “Wellness goes beyond merely the absence of distress and includes being challenged, thriving, and achieving success in various aspects of personal and professional life.”

Traditionally, health-care organisations assess programme performance from several patient-based indicators of the quality of care received (panel 1). By considering the relation between physician distress and patient perceptions of care, we have the opportunity to draw attention to physician wellness. Unfortunately, such indicators of quality of patient care and quality within health-care systems often seem to overlook or ignore the issue of physician wellness. But expansion of assessments to explicitly include physician wellness could lead to improvements in wellness.

In this Review, we present evidence from published reports to underscore the extent to which physicians face stressful working conditions. We discuss how and why physicians are unwell, and supply possible explanations for the profession’s poor record of self-care, a practice that is difficult to revoke because of individual, professional, and organisational barriers. We

review the potential consequences of self-neglect by physicians, both individually and at the level of health-care systems. We also address why health systems should routinely measure physician wellness as an indicator of health-system quality in view of the growing recognition that suboptimum physician wellness adversely affects system performance. We discuss some of the measurement and operational challenges associated with implementation of this missing quality indicator, and raise several issues that will need to be addressed to achieve the desired outcomes of improved physician wellness and system quality.

Risk of physician ill health

Practising medicine is stressful to many physicians. For example, authors of a Canadian study reported that 64% of physicians feel that their workload is too heavy, and 48%

Search strategy and selection criteria

We searched Medline and the Cochrane Library for review articles (January, 1985–July, 2009) and original articles (January, 2004–July, 2009) using several search terms to capture: physician demographics (eg, internship and residency, health personnel, medical staff, women physicians, medical students, general practitioners, internist, pediatrician, surgeon); wellness indicators (eg, burnout, suicide, fatigue, impaired or psychological distress, stress or wellbeing, work hours, work shifts, workload, anxiety, cognition, depression); negative medical consequences of physician impairment (eg, professional or diagnostic errors, fatigue, medical errors, sick leave, sleep deprivation, work schedule tolerance); and health-care organisational perspectives on physician wellness (eg, occupational health, personnel staffing and scheduling, personnel turnover). We focused on reports published in the past 5 years, but did not exclude frequently referenced and highly regarded reports published more than 5 years ago. We also searched reference lists of reports identified by this search strategy and selected those we judged relevant. Our reference list was modified on the basis of comments from peer reviewers. We identified an extensive number of studies, many of which could not be meaningfully acknowledged in this report; our report is not intended to cover all present knowledge of physician wellness. Therefore, we strategically selected a subset of high-quality studies that we judged to be most effective and relevant to draw attention to and support the central themes of this report.

Panel 1: Patient-based indicators for quality of care

According to the US Institute of Medicine, such indicators include health-care processes (eg, periodic blood and urine tests for patients with diabetes), patient outcomes (eg, 60-day survival rate of patients receiving cardiac bypass), patient perceptions of care (eg, experience with patient-provider communication), and the ability to provide high-quality care associated with organisational structure and systems (eg, entry systems for drug ordering).¹⁵

have had an increase in their workload in the past year.¹⁶ Additionally, surveys consistently document that doctors work many hours, averaging 50–60 h per week when not on call.¹⁷ When physicians frequently work shifts longer than 24 h, the resulting fatigue is associated with negative consequences for physicians, both personally and professionally. Personally, they have increased risk of burnout,⁷ percutaneous needle stick injuries,¹⁸ and motor-vehicle crashes or near-miss incidents when driving home.¹⁹ Professionally, physicians have significantly more failures of attention than do those working shifts shorter than 16 h,¹¹ and make more serious medical errors than do those working shifts shorter than 24 h.¹⁰

Beyond the effects of workload and fatigue, physicians might be affected by other stressors specific to medicine. For example, physicians work in emotionally-charged situations, associated with suffering, fear, failures, and death, which often culminate in difficult interactions with patients, families, and other medical personnel.^{20,21} Furthermore, excessive cognitive demands caused by the need for quick processing of overwhelming amounts of information for long periods can negatively affect work quality.²²

Moreover, rapid and recent changes to the practice of medicine—eg, increased patient-care demands, remuneration issues, growing bureaucracy associated with medical practice, increased accountability, and conflict between the needs of the organisation and patients—are all potential threats to physician wellness.^{21,23–26} In view of these organisational shifts, much research has focused on the substantial decline in physicians' autonomy because of increased managerial and cost control by governments, employers, and patients.^{24,27,28} For example, quality-of-care interventions attempting to standardise care protocols are proven to provide improved care based on evidence,^{29–31} but physicians who encounter these organisational restrictions on their decision making and autonomy often report increased job dissatisfaction and stress.^{32–35} Similarly, the rise of managed care in countries such as the USA and Israel has raised concerns because physicians fear that such care will be of lower quality for patients, and reduce physicians' income and autonomy.^{28,35,36}

Excessive workloads, chronic work-related stress, and restricted autonomy lead to high occurrence of physician

stress and burnout. 46% of physicians surveyed in one study reported medical practice to be very or extremely stressful.³⁷ Cohen and Patten³⁸ recorded that 17% of resident doctors rated their mental health as fair or poor, which is more than double the amount reported in the general population. Burnout seems to be common in physicians, affecting an estimated 25–60%,^{26,39–41} and up to 75% in some studies.^{7,9}

The consequences of long periods of excessive work stress and burnout could have serious outcomes for the wellness of individual physicians (eg, substance abuse, relationship troubles, depression, or even death).^{1–4,42,43} However, prevalence statistics associated with physicians' mental and emotional health vary substantially because such wellness indicators are difficult to quantify and estimate. Some studies clearly document that physicians have greater job stress and emotional distress than do the general population.^{38,44–46} Other studies report that physicians have similar wellness to the general population,^{3,5,47} but that depression is heightened in female physicians, medical students, and residents.^{9,42,44,48} Suicide rates for physicians are estimated to be six times higher than in the general population, their cardiovascular mortality is higher than average, and about 8–12% of all practising physicians are expected to develop a substance-abuse disorder at some point in their career.^{20,49,50} Irrespective of whether physician distress is similar to that of the general population, or if most doctors are happy,⁵¹ recognition of the potentially harmful effects of stressful work on physician wellness is important.

Suboptimum attention to self-wellness by physicians

Physician wellness is complex and multifaceted: individual, professional, and organisational factors might affect a physician's ability to be well. In terms of individual factors, research suggests that physicians are not very good at tending to many of their wellness needs or seeking help from others.^{20,52–55} Arnetz²⁰ refers to the “ignorance, indifference and carelessness of physicians towards their own health”; physicians neglect to have physical examinations and procrastinate when seeking medical treatment. This pattern of behaviour seems to be universal. For example, of 18% of Canadian physicians who were identified as depressed, only 25% considered getting help and only 2% actually did.¹⁶ Many physicians do not have family doctors. For example, Pullen and colleagues⁵³ reported that only 42% of Australian physicians studied had a general practitioner, and most had self-prescribed drugs. Uallachain⁵⁶ recorded that 30% of young Irish physicians had not been to a general practitioner in the previous 5 years, 65% felt unable to take time off from work when they were ill, 92% had self-prescribed drugs at least once, and 49% felt that they neglected their own health. Similarly, Thompson and colleagues⁵⁵ reported that most British doctors are aware

that they are not very good at taking care of themselves; most said that they work when unwell and they also expect their colleagues to do so, even though they would not place the same expectations on their patients.

Moreover, doctors often rely on denial and avoidance as coping strategies, which are not very effective;^{49,52} the problem is exacerbated by the medical profession's poor record for giving mutual support and feedback.⁵⁷ The conspiracy of silence deters doctors from talking about their colleagues' distress or their concerns for their own personal health.²⁰ Furthermore, a perceived stigma is associated with seeking help. Doctors might feel uncomfortable in the role of patient, and fear that others will interpret their need for help as an indicator of their inability to cope.^{55,56} Findings show, however, that physicians who receive support from their colleagues or spouse are more successful in achieving wellness.⁵⁸

Other predictors of physician wellness at the individual level include physicians' personality traits and gender. Certain prevalent physician personality traits (eg, perfectionism, workaholicism, and type A personalities) are associated with adverse health outcomes, including burnout, depression, anxiety, eating disorders, and cardiovascular disease.⁵⁹ McManus and colleagues⁶⁰ showed that physicians' personalities and learning styles are associated with their stress, burnout, and attitudes to work. Furthermore, female physicians often face greater challenges than do male physicians with respect to balancing work and family responsibilities, resulting in increased work–family conflict and stress.⁶¹

The effect of professional factors on wellness is exacerbated by the historical tendency of the profession to ignore indicators of distress.⁴⁹ Many doctors face the ethical dilemma of choosing to protect the privacy of their impaired colleagues or patients' safety. Farber and colleagues⁶² presented hypothetical scenarios to doctors and showed that most doctors are more likely to report a physician with a substance-abuse disorder than one who is emotionally or cognitively impaired. Roberts and colleagues⁶³ noted that preserving confidentiality between colleagues is a dominant factor, even when hypothetical doctors are at risk of suicide or patient care is compromised. They proposed that a contributing factor could be the present approach to educating physicians, which rewards individual achievement, self-reliance, independent judgment, industry, and self-sacrifice; unintentionally, this approach could “inculcate the notions that the best doctors have few needs, make no mistakes and are never ill”.⁶³

Physicians could also be deterred from seeking help for physical, mental health, or substance-abuse problems because many licensing boards discriminate against these physicians, even if they have received effective treatment and the diagnosis has no effect on their professional skills and abilities.^{50,64,65} Many medical licensing applications include questions that ask about the physical health, mental health, and substance use of

applicants.⁶⁴ Some licensing boards undertake investigations if physicians seek treatment, which can lead to sanctions irrespective of whether there is any evidence of impaired functioning.⁶⁶ The idea that physicians fear damaging their careers or putting their medical licence in jeopardy if they seek treatment for such problems is gradually receiving increased attention by published reports, and underscores an important consequence of stigmatisation with respect to physician ill health.⁶⁷

The culture of the medical profession has been recognised as a key factor that might deter doctors from taking care of themselves. In a study of physicians' attitudes towards their own health, Thompson and colleagues⁵⁵ identified that general practitioners feel pressure from both their patients and colleagues to appear physically well, even when they are sick, because they believe their health is interpreted as an indicator of their medical competence. Similarly, McKevitt and colleagues⁶⁸ reported that more than 80% of the general practitioners and hospital doctors in their study worked through their illness. Their results from interviews with doctors showed that professional and organisational barriers, which reinforce one another, could contribute to reluctance to take sick leave or discuss health concerns with colleagues.⁶⁸ Moreover, Baldwin and colleagues⁶⁹ have shown that trainee doctors are adopting the same behaviour that has been previously reported in older, more established doctors. When questioned about their response to hypothetical illnesses, 61% of junior doctors would go to work and wait and see if they were vomiting all night, 83% if they had blood in their urine, 76% if they had a suspected stomach ulcer, and 73% if they had severe anxiety.⁶⁹

Health-care organisations might also falter in provision of even basic resources for physician wellness and self-care, such as adequate rest, recovery, and nutrition.⁷⁰ Despite these shortcomings, certain aspects of physician wellness are being addressed by health-care systems and professional medical organisations. Many countries, including Canada, Australia, and the UK, are developing programmes to identify and treat impaired or disruptive physicians, and some health-care organisations are targeting prevention and promoting wellness (panel 2). These are worthy beginnings. However, at present there are no standards to dictate how to promote physician wellness, enforce these mandates, or measure success.

Unwell physicians negatively affect health-care systems

Growing evidence points to important negative consequences of physician ill health to health-care systems by affecting recruitment and retention of physicians, workplace productivity and efficiency, and quality of patient care and patient safety. The worldwide shortage of physicians in primary health care makes physician wellness especially important for recruitment and retention to the medical profession.^{74,75} Medical

Panel 2: Programmes run by health-care organisations to improve physician wellness

In the UK, the National Clinical Assessment Service aims to “help to clarify the performance concerns [of doctors], understand what is leading to them and support their resolution in order to, where possible, restore safe and valued practice”.⁷¹ The organisation offers online resource materials such as access to the Practitioner Health Programme that provides a free confidential service for doctors who have mental or physical health concerns or addictions.

The Canadian Medical Association has a dedicated centre for physician health and wellbeing, and every provincial medical association within Canada has a physician wellness portfolio. In addition to providing support to distressed physicians and their families, the Alberta Medical Association Physician and Family Support Program is engaged in several wellness educational activities, such as promotion of adequate sleep and workplace nutrition, and support for dealing with adverse events, complaints, and medical legal litigation.

In the USA, the Joint Commission accreditation for hospitals mandates that the medical staff “implement a process to identify and manage matters of individual health for licensed independent practitioners which is separate from actions taken for disciplinary purposes”.⁷² The organisation also offers educational materials for dealing with issues such as the disruptive health professional.⁷³

school training is extremely stressful and often has negative effects on students’ mental health,^{48,76} which could deter individuals from entering the profession, completing their medical training, or entering certain medical specialties. According to findings from Cohen and Patten’s³⁸ study, 22% of physician residents beginning their careers as doctors would not pursue medicine if given the opportunity to relive their career. Young physicians report nearly twice the occurrence of burnout compared with their older colleagues, and burnout could begin as early as residency training.⁷ Although physician shortages can be partly offset by increased reliance on international medical graduates, immigrant doctors are likely to face additional stressors and strains above and beyond those that they share with their local colleagues.

Excessive job stress, burnout, and dissatisfaction are closely related to job and career turnover.^{8,77,78} Physicians who are highly dissatisfied with their work have increased probability of changing jobs within medicine or leaving medicine entirely. From a survey of University of Ottawa physicians, 50% thought about leaving academic medicine every week and 30% thought of leaving medicine altogether.¹⁶ Such professional malaise impedes recruitment of the best and the brightest individuals into medicine and to some medical specialties.^{79–81} Moreover, as workloads and stress increase, we expect turnover rates to rise and contribute to the increasing costs associated with recruitment and retention of physicians.

The cost of replacing a physician is estimated to be US\$150 000–300 000, dependent on the time taken to search for, screen, and interview candidates, and revenue lost to the health centre (eg, retaining a locum to replace the departing physician).⁸² This estimate does not include additional expenses of signing bonuses, moving expenses, or promotion costs.

At the organisational level, physician burnout is associated with reduced workplace productivity and efficiency. Such an effect is related to increased absenteeism, job turnover, interest in early retirement, and probability of ordering unnecessary tests or procedures, and reduced practice revenue and time with patients.⁸³ Physicians with mental health problems are costly to organisations because of sickness absences, suspensions, and early retirement.⁵⁹

Perhaps of even greater concern is the direct effect of physician wellness on quality of care and patient safety.^{5–8,84} Firth-Cozens and Greenhalgh,⁶ examined physicians’ perceptions of the link between work-related stress and patient care. 57% of participants believed that tiredness, exhaustion, or sleep deprivation negatively affected patient care, and another 28% believed that pressures from being overworked were negatively related. Work-related stress led to 50% reporting reduced standards of patient care (eg, taking short cuts, not following procedures), 40% reporting irritability or anger, 7% reporting serious mistakes not leading to patient death, and 2·4% reporting incidents in which the patient died. Tiredness and overwork were most often judged to be responsible for these outcomes, especially the most serious ones. Di Matteo and colleagues⁸⁵ undertook a 2-year longitudinal study of 196 physicians to assess the effect of practice characteristics, practice styles, and job satisfaction on more than 20 000 patients with diabetes, hypertension, and heart disease. Physicians’ overall job satisfaction had a positive effect on patients’ adherence to treatment and actions in managing their chronic diseases. Williams and Skinner’s⁸ narrative review of outcomes of physician job dissatisfaction support these results: more dissatisfied physicians tend to have riskier prescribing profiles, less adherent patients, and less satisfied patients, all of which might indicate reduced quality of patient care.

Findings from several studies of residents clearly show the link between physician distress, in terms of burnout and depression, and the effect on patient care, especially medical errors. Shanafelt and colleagues⁷ reported that more than 75% of their study participants met the criteria for burnout, and these residents had two to three times increased probability of reporting that they had provided suboptimum patient care at least monthly or weekly. Some of the suboptimum practices included: failure to fully discuss treatment options or answer patient questions, treatment or medication errors that were not due to lack of knowledge or inexperience, and reduced attentiveness or caring behaviour towards their patients. Similarly, Fahrenkopf and colleagues⁹ recorded that 20% of residents

studied were depressed and 75% were burned out, and those who were burned out or depressed, or both, had significantly increased risk of making medication errors. From a prospective longitudinal study, West and colleagues¹² identified that residents' self-perceived medical errors were significantly and adversely associated with overall quality of life, burnout, and the likelihood of screening positive for depression.

Factors such as overwork, inadequate sleep, and exhaustion, compounded with feelings of guilt, often result in poor care that could contribute to a cycle of stress and diminishing quality of patient care.^{41,52,86} Sleep deprivation can be more incapacitating than a high blood-alcohol concentration,⁸⁷ and call-associated fatigue is related to increased error rates in the cognitive skill domain for surgeons.⁸⁸ Halbesleben and Rathert's⁸⁹ findings showed that the depersonalisation dimension of physician burnout was associated with decreased patient satisfaction and lengthened recovery time after discharge. Furthermore, research findings suggest that medical students and physicians who have a poor personal health profile are less likely than are those who are healthy to recommend any kind of evidence-based screening to their patients⁹⁰ or counselling for healthy lifestyle such as moderate alcohol use.⁹¹ In turn, physician wellness and satisfaction are important contributors to patients' adherence to treatment and satisfaction.^{5,8,84,86,92}

Physician wellness as an indicator of health-system quality

In view of the effect of suboptimum physician wellness on health systems, measurement of provider wellness as a health-system quality indicator could be highly beneficial. For effective improvement in health-system quality and performance, however, quality indicators need to be both measurable and actionable.¹⁵ We need valid and reliable methods to measure provider wellness as an indicator of health-system quality, and evidence about how best to intervene if suboptimum system performance is identified.

Fortunately, physician wellness is measurable. Despite methodological challenges, existing instruments can assess physician wellness at a system level. For example, Arnetz²³ used a standardised questionnaire—the quality of work competence survey—to assess ten core components of organisational and staff wellbeing that included mental energy, work climate, work tempo, work-related exhaustion, skills development, organisational efficacy, and leadership. From these components, he computed an overall weighted score that represented a global, composite measure of the overall health of the organisation. Arnetz²⁴ suggests that subjective indicators from employees can be used to gauge and improve organisational performance and wellness. He argues that improvement of physician wellness can improve the organisation's wellbeing and health, and that physician

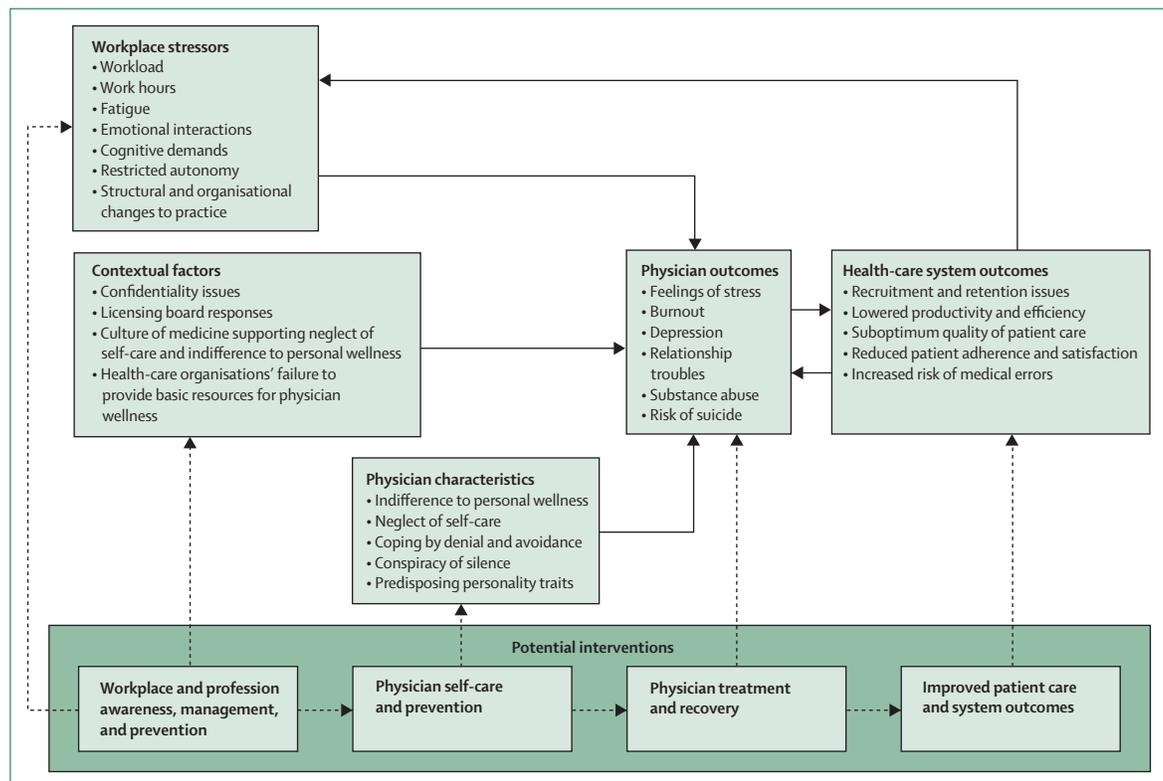


Figure: A model of physician ill health and the links with health-care system outcomes, and potential interventions to improve physician and system outcomes. Solid lines are empirically supported; broken lines are potential links.

wellness should receive the same priority as patient care and financial viability. That is, individual physician wellness is a valid indicator for organisational health.

Measures of physician wellness also seem to be actionable: in situations of suboptimum physician wellness, effective interventions have been implemented.^{95–98} In a study by Dunn and colleagues,⁹⁵ three interventions were introduced to a primary care group consisting of six sites and 32 physicians. The interventions were designed to enhance physicians' control over their work environment, improve efficiency in office design and quality of staff, and contribute to a sense of satisfaction and meaning derived from patient care. The results showed clinically and statistically significant decreases in emotional and work-related exhaustion—key indicators of burnout—during the study, and other improvements in physician wellbeing were noted. In a study of stressed physicians to assess the effect of a counselling intervention on burnout, Rø and colleagues⁹⁹ showed clinically and statistically significant reductions in emotional exhaustion and sick leave at 1-year follow-up in the 185 physicians who completed the study.

Although interventions could improve physician wellness, very little research has directly examined the effect of such interventions on patient care or health-system performance. Although much is known about physician distress and the negative effect on patient care, little is known about whether interventions directed at physician wellness will also improve patient care.²⁵ However, Jones and colleagues¹⁰⁰ study did suggest that stress management interventions could be beneficial to both physicians and their patients. They showed a strong relation between a stressful workplace and malpractice risk in both medical departments and hospitals. Furthermore, they recorded significant reductions in medication errors and malpractice claims after introduction of stress-management programmes to 22 hospitals; by contrast, rates for the 22 hospitals in the control group (matched on bed numbers, frequency of claims, and rural vs urban) remained unchanged.

Nevertheless, further research is needed to explore how interventions designed to improve physician wellness are also beneficial to patients and the organisations that support such interventions. Studies that identify both individual and organisational wellness interventions, and that assess the effects of such interventions on patient care, efficiency, and productivity, will be important to support both the promotion of wellness programmes and the inclusion of physician wellness as a quality indicator. The figure proposes a model to show the empirically established links between physician ill health described in our Review, and the potential interventions that could improve physician and system outcomes.

Conclusion

The first step to incorporation of physician wellness as a quality indicator is to promote dialogue among key

stakeholders (physician groups, health-system decision makers, payers, and the general public) about the components needed in such a quality-indicator system to best measure physician and organisational wellness, and the interventions needed to improve physician and organisational wellness. Assessment of physician wellness as an indicator of an organisation's quality of health care is only the first step. Increased awareness of the importance of physician wellness, both individually and organisationally, is needed by physicians, their patients, and their employers. A shift in the culture of care and wellness of physicians is necessary. If these groups do not recognise the crucial importance of physician wellness, there is little reason to expect that physicians and their employers will invest in taking better care of physicians, or that the public will support and appreciate such efforts.

Ultimately, individual physicians will personally benefit from taking better care of themselves. Such efforts would probably lead to increased job satisfaction and overall wellbeing, and reduced likelihood of physicians experiencing an overwhelming sense of stress and burnout. The organisations employing physicians will benefit by having more productive and efficient health-care providers in conjunction with reduced absenteeism, job turnover, and recruitment and retention issues. And perhaps the patients themselves will benefit by receiving better quality of care.

Contributors

JEW was mainly responsible for the search of published work. All authors contributed equally to writing of the report.

Conflicts of interest

We declare that we have no conflicts of interest.

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