



# Healing the Professional Culture of Medicine

Tait D. Shanafelt, MD; Edgar Schein, PhD; Lloyd B. Minor, MD;  
Mickey Trockel, MD, PhD; Peter Schein, MBA; and Darrell Kirch, MD

## Abstract

The past decade has been a time of great change for US physicians. Many physicians feel that the care delivery system has become a barrier to providing high-quality care rather than facilitating it. Although physician distress and some of the contributing factors are now widely recognized, much of the distress physicians are experiencing is related to insidious issues affecting the cultures of our profession, our health care organizations, and the health care delivery system. Culture refers to the shared and fundamental beliefs of a group that are so widely accepted that they are implicit and often no longer recognized. When challenges with culture arise, they almost always relate to a problem with a subcomponent of the culture even as the larger culture does many things well. In this perspective, we consider the role of culture in many of the problems facing our health care delivery system and contributing to the high prevalence of professional burnout plaguing US physicians. A framework, drawn from the field of organizational science, to address these issues and heal our professional culture is considered.

© 2019 Mayo Foundation for Medical Education and Research. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>) ■ Mayo Clin Proc. 2019;94(8):1556-1566



For editorial  
comment, see  
page 1401

From the Department of Medicine (T.D.S.), Department of Otolaryngology (L.B.M.), Department of Psychiatry and Behavioral Sciences (M.T.), Stanford University School of Medicine, Stanford, CA; Organizational Culture and Leadership Institute, Menlo Park, CA (E.S., P.S.); and Association of American Medical Colleges, Washington, DC (D.K.).

The past decade has been a time of great change for US physicians. The demand for medical care and the complexity of the care delivered have increased. Narrowing insurance networks have decreased access and eroded continuity of care. Increased physician productivity expectations have led to shorter clinic visits and decreased time with patients. New regulatory requirements (meaningful use, e-prescribing, and medication reconciliation) and more widespread penetration of electronic health records (EHRs) have increased clerical burden.<sup>1,2</sup> Simultaneously, an array of metrics (eg, patient satisfaction, how rapidly physicians process inbox messages and close charts, quality measures, and relative value unit generation) have been introduced to assess physician performance.<sup>3</sup> These measures are imperfect, often fail to capture the nature of physicians' work, and leave many physicians feeling micromanaged and demoralized.<sup>2-4</sup> Time and motion studies as well as analyses using EHR time stamps indicate that 50% of the physician workday is now spent on administrative work and "desktop medicine."<sup>5,6</sup> Much of

this clerical work is performed on personal time, with studies suggesting that the average physician spends 28 hours on clinical documentation on nights and weekends each month.<sup>7</sup>

Although each of these changes had an underlying rationale and, in many cases, were intended to improve patient care or manage costs, they place new burdens on physicians. As a result, many physicians feel the care delivery system has become a barrier to providing high-quality care rather than a supportive infrastructure facilitating it.<sup>3,8</sup> National studies indicate that the prevalence of burnout in physicians is dramatically higher than that in the general US working population.<sup>4,9,10</sup> Extensive evidence indicates professional burnout, and erosion of meaning in work have both personal and professional implications.<sup>11,12</sup> Recognizing the importance of this problem, a number of vanguard organizations and professional societies have prioritized addressing this issue.<sup>13</sup> To date, these efforts have typically focused on a collection of operational approaches to improve efficiency, redesign workflows, and enhance teamwork

as well as individual efforts to help physicians strengthen personal resilience skills.<sup>14-20</sup> Although these efforts may be part of the solution, they do not address many of the fundamental cultural issues underlying this problem.

### UNDERSTANDING CULTURE

Although physician distress and some of the contributing factors are now widely recognized, we believe that many of these problems are symptoms of more insidious issues affecting the culture of our profession as well as the culture of our health care organizations and the health care delivery system. *Culture* refers to the shared and fundamental beliefs, normative values, and related social practices of a group that are so widely accepted that they are implicit and no longer scrutinized. In the life of individuals, organizations, and societies, culture is a pervasive, powerful, and often unseen force. Although visible manifestations of culture, such as workplace regulations, policies, benefits, tolerance of mistreatment or harassment, professional behavior, and the incentive system, are often mistaken for culture, such characteristics are better thought of as climate and can be altered through the actions and influence of an individual leader or group of leaders.

Culture is more expansive, multifaceted, and deeply rooted in the history of the profession or organization. Culture provides identity, order, meaning, and stability. Culture is preserved over time (passed from older members to younger members) because it served an adaptive purpose that allowed a group to endure through historical challenges.<sup>21</sup> There are at least 3 levels to culture.<sup>21</sup> *Artifacts* (or symbols) are the visible manifestations of culture—our actions, behaviors, heroes, and rituals. *Espoused values* are what we claim our values and priorities to be, as manifested in mission statements, the communications shared across the organization or profession, publicly stated values, and even advertising and promotional messaging. *Tacit assumptions* are the underlying things we truly believe and value, that is, the unwritten rules

that drive our daily behavior. In this context, it should be emphasized that the term *artifacts* refers to tangible characteristics of the culture or institution not “something belonging to an earlier period” or “a specious effect.”

In the culture of medicine broadly, how we design clinics as well as how we treat patients and colleagues are examples of artifacts; the Hippocratic Oath and the Charter on Professionalism<sup>22</sup> are examples of espoused values. The belief that physicians should always be motivated by the best interest of the patient is an example of a tacit assumption.

In addition to the overarching culture of the profession, physicians practice within organizations that have their own cultures. Each health care organization has its own artifacts (eg, their policies about access for the underserved or their compensation system), espoused values (the mission statement), and tacit assumptions (we exist to provide medical care to all residents in our community regardless of the ability to pay [or not]). A review of the mission statements of nearly all US health care organizations indicates that they claim to be committed to providing the highest quality of care to individual patients in need. They simultaneously espouse different degrees of emphasis on compassion, learning, discovery, healing humanity, and strengthening communities, all of which are noble ambitions. They differ at the tacit assumption level in the degree to which they emphasize other values such as quality, community or employee health, or economics as deep drivers of their practices.

### DIAGNOSING PROBLEMS IN THE CULTURE OF MEDICINE AND HEALTH CARE

When challenges with culture arise, they almost always relate to a problem with a subcomponent of the culture even as the larger culture is well adapted to operating realities. A simple way to diagnose problems with a given dimension of culture is to look at incongruity between artifacts and espoused values. This is often best accomplished through group interviews and discussion

TABLE 1. Incongruence Between Artifacts and Espoused Values in Medicine

Domain	Espoused value (what we say)	Artifact (our behavior)	What it reveals
Culture of our organizations and health care system	Physicians are professionals (we trust them)	Preauthorization and excessive documentation required to justify billing and prevent malpractice suits	We do not trust you
	Physicians are our most highly trained and expensive workers (we should maximize their efforts)	Excessive clerical burden and ineffective use of time	Your time is not valuable
	High-quality care is our top priority	A delivery system that drives fatigue and burnout which erode quality of care	Economic priorities are more important than quality
		Focus on relative value units/ volume/net operating income	Commoditization of physicians and patients
	We value patient autonomy, shared decision making, and tailoring care to individual needs	Visit lengths and limited staff support preclude shared decision making and tailoring care to individual patient needs	Economic priorities are more important than patient agency
	We believe in social justice and fair distribution of resources for our patients and communities	Organizational tactics that tailor access to optimize payer mix and care for highly reimbursed medical conditions rather than patient need	Economic priorities are more important than social justice assumptions
Professional culture	Self-care is important	Excessive hours, work always first, and often do not take care of ourselves (diet, exercise, sleep, and preventive health care)	Self-care is not important; short-term productivity is more important than sustainability
	Prevention is better than treatment	We do not attend to our own health needs	Physician health is not important
	To err is human	A professional culture of perfectionism, lack of vulnerability, and low self-compassion	Physicians expected to be superhuman
		Belief that mistakes are the fault of the individual and are unacceptable	We have not yet internalized many of the lessons of the quality movement that errors are inevitable in complex systems
	Fatigue impairs performance	Excessive work hours; work even when ill	We do not believe this adage applies to physicians or we are too arrogant to admit it does

among members of the organization or profession along with external experts (often consultants) who are not part of the culture. The inclusion of experts from outside the culture is important because insiders often become blind to some inconsistencies and might opt for an approach that violates some fundamental mission assumptions without realizing it.

When we see behavior that does not reflect espoused values, it invites reflection to identify the tacit assumption that may actually be driving behavior.<sup>21</sup> In this framework, we would propose that challenges with the EHR, excessive clerical work, overemphasis on productivity (generating relative value units), loss of flexibility/autonomy, and too little time with patients

represent artifacts that are incongruent with espoused values (Table 1). This incongruence reveals the deeper more fundamental tacit assumptions of our organizations, health care delivery systems, and our profession that require reflection.

We must acknowledge that at the professional level, we have some blind spots and unhealthy norms that can lead to potentially destructive behavior. As physicians, we tend to overwork, imply that normal human limitations do not apply to us, and often assume the role of a hero.<sup>23-26</sup> We inculcate future physicians with a mindset of perfectionism, lack of vulnerability, and low self-compassion.<sup>27</sup> We teach them that they should always defer self-care and personal relationships as long as needed to meet professional demands. Mistakes are the fault of the individual and are unacceptable.<sup>25,28</sup> To err is human, but we are superhuman. We espouse the importance of prevention, self-care, and personal behaviors to promote health for our patients, but often do not engage in these behaviors ourselves.<sup>29-31</sup> We prioritize professional life above all, even if it means we are working in a manner that is not sustainable or that renders our medical decision making suboptimal.<sup>25</sup>

One view is that these approaches served a purpose in historical settings in which there were too few physicians—a world in which all physicians needed to care for as many patients as possible and, in such situations, an exhausted physician was better than no physician at all. Similarly, 50 years ago, individual perfectionism by an authoritarian physician was our profession's approach to quality. In most settings today, these assumptions no longer serve the best interest of patients, physicians, or our care delivery system.

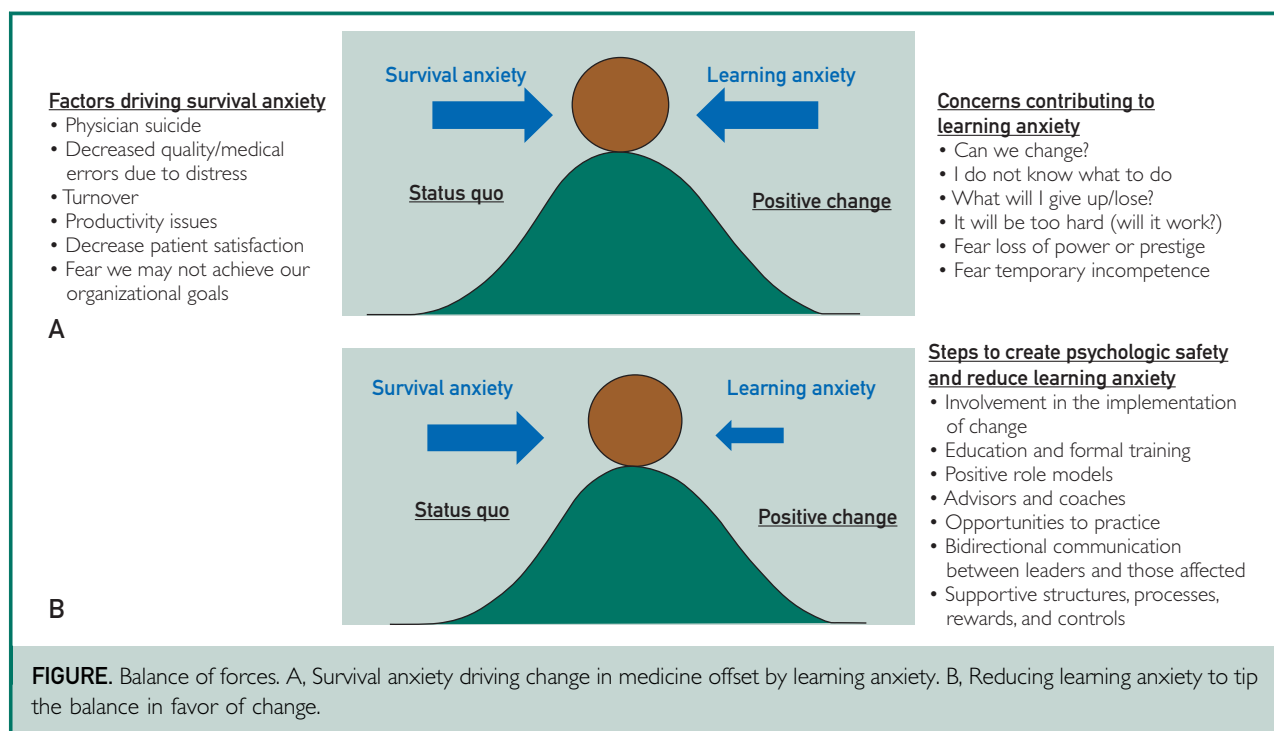
In the cultures of our organizations and the health care system, there is also incongruence between behaviors and espoused values.<sup>32-34</sup> We claim to believe that physicians are competent and trustworthy professionals who set, maintain, and enforce professional standards but payers and regulators have created a tedious process of pre-authorization and onerous documentation

requirements that are costly and inefficient and show a lack of trust.<sup>1,35</sup> We claim that physicians are our most valuable resource but saddle them with excessive, low-value, clerical work.<sup>2</sup> We decry conflicts of interest with the pharmaceutical industry yet simultaneously promulgate compensation systems in our health care organizations that are designed to maximize productivity over quality, reward overuse of resources, and treat physicians like a unit of production rather than a professional.<sup>36-38</sup> We claim to value shared decision making and personalized care for patients yet demand 20-minute office visits that do not provide adequate time to pursue these goals.<sup>39</sup> Our mission statements espouse social justice and fair distribution of resources for our patients and communities,<sup>32,33,40</sup> yet we use organizational tactics that limit access on the basis of ability to pay.

These incongruities between stated values and organizational behavior are clear to physicians and create cognitive dissonance that breeds cynicism and a sense of misalignment between the organization's goals and the altruistic aims of the profession. What can we do to change some of the tacit assumptions that are driving this system or ameliorate their negative effects?

### THE IMPERATIVE FOR CULTURE CHANGE

Cultures change when there is a stimulus that upsets the equilibrium. Leaders and members of a culture must believe something bad will happen if they do not change. This precipitates "survival anxiety."<sup>21</sup> There is now overwhelming evidence that this is the situation that our profession, our organizations, and the US health care delivery system find themselves in. Symptoms of burnout and professional distress are dramatically more common in physicians than in workers in other fields.<sup>4,9,10</sup> Burnout has been associated with social problems ranging from broken relationships to abandoning the profession.<sup>41</sup> Equally concerning, there are clear associations between burnout and mental disorders, including substance abuse, anxiety, depression, and suicidality.<sup>42-45</sup> At the professional level, our lack



of self-care, dysfunctional perfectionism, excessive work hours, fatigue/exhaustion, lack of vulnerability, and “physician as hero” mentality are not serving us well.

Survival anxiety should also be high for all stakeholders in our health care organizations and delivery system. Physician burnout is associated with reduced quality of care, increased medical errors, and lower patient satisfaction.<sup>11,12,46,47</sup> Multiple studies now report that burnout is associated with reduced productivity, turnover, and physicians leaving the profession,<sup>41,48-50</sup> all of which threaten access to care precisely at a time we are already facing substantial shortages of physicians.<sup>51</sup> The threat and the imperative for change are not hypothetical. There are already negative effects on patient care, the profession, and the system in which they interact.

Once survival anxiety occurs, an opposing force—“learning anxiety”—is also created and manifests as resistance to change.<sup>52</sup> The essence of learning anxiety is the realization that we may not be able to make the changes needed to solve the problem. They will be too difficult, too costly, or

too disruptive. The resulting resistance to change often manifests as minimizing the problem, ignoring evidence, or total denial.<sup>21</sup> It also takes the form of defending tradition (“This is how we’ve always done it.”), using anecdotes (“It worked for me.”), blaming the individual (“You chose this profession.”), suggesting change will be too costly (“We don’t have the resources.”), trying to justify ignoring one problem by articulating a larger unrelated or tangentially related problem (“There are children starving in Africa.” or “Many of our patients cannot even afford to buy food.”), or the belief that virtues and vice cannot be separated (eg, “If we acknowledge human limitations, we cannot uphold high standards.”).

### INITIATING CULTURE CHANGE

Survival anxiety and learning anxiety are competing forces. The key to initiating change is tipping the balance of these forces (Figure).<sup>21</sup> Although the temptation is to do so by further increasing survival anxiety, this approach often just increases resistance to change and the tension in the system. Once the need for change is recognized, it

TABLE 2. Present State and Ideal Future State

Present state	Ideal future state
Neglect and self-sacrifice to a fault	Self-care (rest and mental health)—viewed as necessary to preserve the effectiveness of physicians
Isolation	Activated support network (personal and colleagues)
Fatigue	Healthy rest and sleep habits
Rarely self-calibrate	Regular self-calibration
Multiple barriers (including state licensure questions) and stigma associated with seeking help	No stigma for seeking help for mental health issues
Asking for help is a sign of weakness	Accept vulnerability (ok to ask for help)
Staffing models without redundancy and without margin for physician illness. Staff to average demand; times of peak demand handled by the existing staff taking on the overload to the point of exhaustion and unsafe practices	Systems that acknowledge human limitations and provide staffing for optimal care at peak demand, not at average demand
No limits on work or workload. No attention to fatigue or sleep-related impairment after complete training. Failure to acknowledge the personal impact of traumatic events, patient death, and unfavorable patient outcomes on the physician	Systems that acknowledge humanity and human limitations
Perfectionism	Self-compassion
Excessive low-value clerical and bureaucratic work that does not improve quality of care	Limited low-value clerical work
Culture of fear	Culture of safety
Work always first; no limitations on intrusion of work into personal life	Work-life integration; group norms favoring personal health and healthy relationships
Burnout common	Burnout rare
Professional environment that often leads to erosion of meaning, purpose, and altruism	Environment that cultivates and strengthens meaning, purpose, and altruism
New regulations and requirements implemented without accounting for the time or cognitive burden associated with those requirements or adequate input from physicians	Time and cognitive burden associated with new regulations and requirements accounted for and greater input from physicians in design before implemented

is best catalyzed by *decreasing learning anxiety*. To do so, we must find specific areas in which change is feasible and in which the individuals who will have to change are engaged and supported rather than forced to change.

We begin by articulating a compelling positive vision of what the ideal future state would look like. The recently published *Charter on Physician Well-being* is an excellent framework from which to build.<sup>53</sup> Mature cultures, such as the culture of medicine and the culture of most health care organizations, typically must unlearn some old habits and ways of thinking before new ones can be incorporated. Once we have defined

the ideal future state, we can then evaluate how it differs from the present state and identify gaps and barriers that need to be addressed to make progress (Table 2). This comparison helps us define the old beliefs and habits we need to unlearn as well as the new things we need to learn, thereby allowing us to plan and manage the change.

In planning culture changes, it is critical to recognize that many of the elements that constitute our professional culture are a source of strength. These positive aspects of our culture will help us change the dimensions that need changing.<sup>21</sup> The robust culture of medicine includes countless praiseworthy elements such as altruism,

service, dedication, compassion, and a commitment to excellence and professional competence. We are motivated by the needs of our patients and what is best for them. We are deeply committed to supporting our colleagues. We believe in the biomedical basis of disease, including mental disorders, and are fervently against stigmatizing health conditions. Although we believe in being heroic healers, we also have a foundational belief in humility. We know some of our current approaches are wrong and we are dedicated to objectively testing interventions and using evidence to refine them. The distress and burnout created by select professional norms and certain aspects of the practice environment run counter to these deeply held values, and it is these values that will help us reform those aspects of our professional and organizational cultures that require changing.

Once we have identified the future state to which we aspire in specific behavioral terms, we must decrease learning anxiety by creating psychological safety for the people and organizations who will have to learn new things.<sup>21</sup> We will have to identify new collaborative strategies and tactics for physicians and leaders to gain experience with new modes of working, group dynamics, and different organizational norms.<sup>21,52</sup> We must provide formal training opportunities and the time and resources to participate for leaders, groups, and teams. We will need positive role models (individuals, leaders, and organizations) who help show what the new way looks like. We will need practice fields that allow units to try new approaches to work, along with advisors and coaches to help them be successful. We will need new systems, structures, controls, rewards, and processes consistent with desired changes.<sup>21</sup> Although the learners do not always get to choose the goal, they must have some control of the process of learning and how they will achieve the goal.<sup>52,54</sup> Bidirectional communication between leaders and learners throughout this process is critical to ensure that the vision of the future state is clear and that the concerns or reservations of the learners are

understood and appreciated. Although this inclusive approach is slower, such involvement is critical to implementing and internalizing the new norms and values and incorporating them into the existing culture. When it comes to improving physician well-being, all of these steps have already begun (Table 3).

It is important to recognize that once a culture is mature, it can only be purposefully changed through “managed evolution.”<sup>21</sup> This means that some beliefs and values have to be deliberately dropped, some new ones adopted, and some transformed. The hardest part of this process is to come to terms with the present culture, which is taken for granted. Therefore, in diagnosing the present culture and identifying the potential areas of change, it is important to create a temporary parallel learning structure to both design the future and assess the present. A parallel learning structure involves a group within the culture developing and testing a new approach. Some member(s) (individuals, work units, divisions/departments, or organizations) within the culture must separate and be exposed to new ways of thinking, allowing an objective assessment of the strengths and weakness of the current approach, as well as learning new ways of behaving and thinking.<sup>21</sup> This may involve scanning the environment for solutions that can be adopted or “trial and error learning.” New solutions in the parallel system can then illustrate for the rest of the organization (or to other organizations) how the new way can work and help define what it looks like. This decreases learning anxiety for the rest of the group and encourages those who continue to resist change to adapt or leave. Pilot studies, phased initiatives, or empowering one department or group to develop and test as an alternative method before scaling it more broadly are also useful structures to facilitate learning new approaches.

### MANAGING THE TRANSITION

For a dimension of culture to change, it is also necessary for leaders to be convinced that a change is necessary. To manage the

TABLE 3. Steps to Facilitate Culture Change Related to Physician Well-being

Key step	Existing examples
Defining ideal future state	<ul style="list-style-type: none"> <li>• Charter on Physician Well-being<sup>53</sup></li> <li>• Charter on Professionalism for Health Care Organizations<sup>32,33</sup></li> <li>• National Academy of Medicine Action Collaborative on Clinician Well-being and Resilience<sup>13</sup></li> </ul>
Formal training for individuals and organizations	<ul style="list-style-type: none"> <li>• Stanford Medicine Chief Wellness Officer (CWO) Training Course</li> <li>• American Medical Association STEPS Forward modules</li> <li>• Publications delineating a road map for progress<sup>11,16,55,56</sup></li> </ul>
Involvement of those who will be affected by the change—goal defined but not the process; not everyone (organization or individual) will get to the goal in the same way	Recognition of the need for a menu of choices—there is not a single solution (eg, scribes are not the only approach to improve the efficiency of practice and mindfulness is not the only approach to personal resilience)
Training of groups and teams	COLleagues Meeting to Promote And Sustain Satisfaction (COMPASS) groups, <sup>57,58</sup> Schwartz Center Rounds, <sup>59</sup> and Balint groups <sup>60</sup>
Practice fields, coaches, and feedback	Time, resources, and support to learn the new way
Positive role models	Vanguard organizations that have appointed a CWO and established a program on physician well-being <sup>55,61</sup> Efforts by leading professional societies: American Medical Association, Association of American Medical Colleges, Accreditation Council of Graduate Medical Education, American College of Physicians, American Academy of Family Physicians, and others <sup>13</sup>
Support groups for learning organizations	American Conference on Physician Health/International Conference on Physician Health Stanford CWO Training Course Physician Wellness Academic Consortium Collaborative for Healing and Renewal in Medicine
Systems, rewards, controls, and structures consistent with the desired changes	Training and coaching for leaders in new behaviors that cultivate engagement; assess and reward the new behaviors desired in leaders <sup>62,63</sup> Reward behavior and achievement of teams, not individuals

transition, a team consisting of top executives and representatives of the major units of the organization plus representative stakeholders outside the organization should be constituted as a “change steering task force.” This team must identify the problem and set in motion the design, planning, and implementation of the next steps. The group should become part of the basic “parallel” structure and continue to exist throughout the change program and be accountable for the various interventions that are made. Top level leaders (eg, dean, chief executive officer, and chief medical officer) must spearhead and remain deeply involved in this work to sponsor, support, or supply

cover for the various initiatives that will arise within the different parts and levels of the organization.

The steering committee must understand the dynamics of the change process and recognize that all forms of the assessment of the present culture as well as change proposals are interventions in their own right and will have known and unknown consequences. If major behavioral changes or changes in beliefs and values are envisioned, it becomes essential for this planning group to involve the individuals who will become targets of the change, because the best way to overcome learning anxiety and make the learners feel psychologically safe is for them to become involved in the



change process. The first step would typically be to “share the problem” by bringing together leaders of the relevant groups that would be affected by the changes to begin dialogues around their perception of the problem and cocreate what adaptive moves might have to be made, how the culture might aid or hinder the change, what parts of the culture would have to be evolved, and especially what the systemic effects would be of proposed changes. Building relationships at this level early is also a necessary investment in successful implementation at the later intervention stages.

## CONCLUSION

If we are going to make substantive progress in many of the problems facing our health care delivery system and the high prevalence of professional burnout plaguing US physicians, we must recognize the cultural dimensions to these challenges. This will require an honest appraisal and new dialogue at the level of our profession, our health care organizations, and the health care delivery system. Some may say such efforts are weakening the profession. They incorrectly will suggest that we are overstating the depth and breadth of the cultural problem and will focus only on artifacts rather than the fundamental issues related to a lack of trust in physicians and economic assertions that view physicians as units of production. They will suggest that attending to self-care, acknowledging human limitations, and cultivating self-compassion mean advocating for lower standards, less commitment, and coddling of physicians and physicians in training. This predictable learning anxiety and the path to overcoming it to make meaningful progress are described in the systematic approach outlined above. It is time for an honest look in the mirror and beginning the important work to heal the culture of medicine for the benefit of our patients, our colleagues, and our profession.

**Abbreviations and Acronyms:** EHR = electronic health record

**Potential Competing Interests:** Dr Shanafelt is a coinventor of the Physician Well-Being Index, Medical Student Well-Being Index, Nurse Well-Being Index, and Well-Being Index. Mayo Clinic holds the copyright for these instruments and has licensed them for use outside Mayo Clinic. Dr Shanafelt receives a portion of any royalties paid to Mayo Clinic. As an expert on the topic of the well-being of health care providers, Dr Shanafelt often presents ground rounds/keynote lecture presentations as well as advises health care organizations. He receives honoraria for some of these activities. Dr E. Schein and Mr P. Schein are cofounders of the Organizational Culture and Leadership Institute and have received honorarium for teaching in the Clinical Effectiveness Leadership Training course work at Stanford Health Care. Dr Minor reports receiving compensation during the past 12 months as an advisor to General Atlantic and unvested stock options for serving on advisory boards of [Ancestry.com](http://Ancestry.com), Mammoth Biosciences, and Mission Bio. He has received payment for lectures from Shanghai Sansi Institute Business Management Consulting, Weill Cornell Medicine, and Vanderbilt University Medical Center. He is on the scientific advisory board of Sensyne Health. He was a senior advisor to Havencrest Healthcare Partners. He spoke at the Imagine Solutions Conference held in Naples, FL, and received support for travel and hotel accommodation. Dr Trockel receives occasional honorarium payments for talks given on the topic of physician wellness. Dr Kirch reports no competing interests.

**Correspondence:** Address to Tait D. Shanafelt, MD, Stanford University School of Medicine, 300 Pasteur Dr, Room 3215, Stanford, CA 94305 ([Tshana@stanford.edu](mailto:Tshana@stanford.edu)).

## REFERENCES

1. Erickson SM, Rockwem B, Koltov M, McLean RM; Medical Practice and Quality Committee of the American College of Physicians. Putting patients first by reducing administrative tasks in health care: a position paper of the American College of Physicians. *Ann Intern Med.* 2017;166(9):659-661.
2. Shanafelt TD, Dyrbye LN, Sinsky C, et al. Relationship between clerical burden and characteristics of the electronic environment with physician burnout and professional satisfaction. *Mayo Clin Proc.* 2016;91(7):836-848.
3. Gunderman R. Poor care is the root of physician disengagement. *NEJM Catalyst.* January 10, 2017. <https://catalyst.nejm.org/poor-care-root-physician-disengagement>. Accessed June 20, 2019.
4. Shanafelt TD, Boone S, Tan L, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. *Arch Intern Med.* 2012;172(18):1377-1385.
5. Sinsky C, Colligan L, Li L, et al. Allocation of physician time in ambulatory practice: a time and motion study in 4 specialties. *Ann Intern Med.* 2016;165(11):753-760.
6. Tai-Seale M, Olson CW, Li J, et al. Electronic health record logs indicate that physicians split time evenly between seeing patients and desktop medicine. *Health Aff (Millwood).* 2017;36(4):655-662.
7. Arndt BG, Beasley JW, Watkinson MD, et al. Tethered to the EHR: primary care physician workload assessment using EHR event log data and time-motion observations. *Ann Fam Med.* 2017;15(5):419-426.
8. Privitera MR. Addressing human factors in burnout and the delivery of healthcare: quality & safety imperative of the quadruple aim. *Health.* 2018;10(5):629-644.

9. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014 [published correction appears in *Mayo Clin Proc*. 2016;91(2):276]. *Mayo Clin Proc*. 2015;90(12):1600-1613.
10. Shanafelt TD, West CP, Sinsky C, et al. Changes in burnout and satisfaction with work-life integration in physicians and the general US working population between 2011 and 2017 [published online ahead of print February 13, 2019]. *Mayo Clin Proc*. <https://doi.org/10.1016/j.mayocp.2018.10.023>.
11. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. *J Intern Med*. 2018; 283(6):516-529.
12. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. *Lancet*. 2009;374(9702):1714-1721.
13. Dzau VJ, Kirch DG, Nasca TJ. To care is human—collectively confronting the clinician-burnout crisis. *N Engl J Med*. 2018; 378(4):312-314.
14. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet*. 2016;388(10057):2272-2281.
15. Panagioti M, Panagopoulou E, Bower P, et al. Controlled interventions to reduce burnout in physicians: a systematic review and meta-analysis. *JAMA Intern Med*. 2017;177(2):195-205.
16. Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin Proc*. 2017;92(1): 129-146.
17. Krasner MS, Epstein RM, Beckman H, et al. Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *JAMA*. 2009;302(12):1284-1293.
18. Gidwani R, Nguyen C, Kofoed A, et al. Impact of scribes on physician satisfaction, patient satisfaction, and charting efficiency: a randomized controlled trial. *Ann Fam Med*. 2017;15(5):427-433.
19. Brown-Johnson CG, Chan GK, Winget M, et al. Primary Care 2.0: design of a transformational team-based practice model to meet the quadruple aim. *Am J Med Qual*. 2018. 1062860618802365.
20. Fassiotto M, Simard C, Sandborg C, Valentine H, Raymond J. An integrated career coaching and time-banking system promoting flexibility, wellness, and success: a pilot program at stanford university school of medicine. *Acad Med*. 2018; 93(6):881-887.
21. Schein EH, Schein PA. *Corporate Culture Survival Guide*. 3rd ed. Hoboken, NJ: John Wiley & Sons, Inc; 2019.
22. ABIM Foundation. American Board of Internal Medicine; ACP-ASIM Foundation. American College of Physicians-American Society of Internal Medicine; European Federation of Internal Medicine. Medical professionalism in the new millennium: a physician charter. *Ann Intern Med*. 2002;136(3): 243-246.
23. Balch CM, Shanafelt TS. Dynamic tension between success in a surgical career and personal wellness: how can we succeed in a stressful environment and a “culture of bravado”? *Ann Surg Oncol*. 2011;18(5):1213-1216.
24. Wheeler HB. Shattuck lecture—healing and heroism. *N Engl J Med*. 1990;322(21):1540-1548.
25. Wessely A, Gerada C. When doctors need treatment: an anthropological approach to why doctors make bad patients. *BMJ*. 2013;347:f6644.
26. Sexton JB, Thomas EJ, Helmreich RL. Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *BMJ*. 2000;320(7237):745-749.
27. Gabbard GO. The role of compulsiveness in the normal physician. *JAMA*. 1985;254(20):2926-2929.
28. Wise J. Survey of UK doctors highlights blame culture within the NHS. *BMJ*. 2018;362:k4001.
29. Frank E, Segura C. Health practices of Canadian physicians. *Can Fam Phys*. 2009;55(8):810-811.e817.
30. Frank E, Segura C, Shen H, Oberg E. Predictors of Canadian physicians' prevention counseling practices. *Can J Public Health*. 2010;101(5):390-395.
31. Shanafelt TD, Oreskovich MR, Dyrbye LN, et al. Avoiding burnout: the personal health habits and wellness practices of US surgeons. *Ann Surg*. 2012;255(4):625-633.
32. Egener B, McDonald W, Rosof B, Gullen D. Perspective: organizational professionalism: relevant competencies and behaviors. *Acad Med*. 2012;87(5):668-674.
33. Egener BE, Mason DJ, McDonald WJ, et al. The Charter on Professionalism for Health Care Organizations. *Acad Med*. 2017; 92(8):1091-1099.
34. Souba WW. Academic medicine and the search for meaning and purpose. *Acad Med*. 2002;77(2):139-144.
35. Blendon RJ, Benson JM, Hero JO. Public trust in physicians—U. S. medicine in international perspective. *N Engl J Med*. 2014; 371(17):1570-1572.
36. Pfeffer J, DeVoe SE. The economic evaluation of time: organizational causes and individual consequences. *Res Organ Behav*. 2012;32:47-62.
37. Batalden P. Getting more health from healthcare: quality improvement must acknowledge patient coproduction—an essay by Paul Batalden. *BMJ*. 2018;362:k3617.
38. Khullar D, Kocher R, Conway P, Rajkumar R. How 10 leading health systems pay their doctors. *Healthc (Amst)*. 2015;3(2): 60-62.
39. Linzer M, Poplul S, Babbott S, et al. Worklife and wellness in academic general internal medicine: results from a national survey. *J Gen Intern Med*. 2016;31(9):1004-1010.
40. Lesser CS, Lucey CR, Egener B, Braddock CH III, Linas SL, Levinson W. A behavioral and systems view of professionalism. *JAMA*. 2010;304(24):2732-2737.
41. Sinsky CA, Dyrbye LN, West CP, Satele D, Tutty M, Shanafelt TD. Professional satisfaction and the career plans of US physicians. *Mayo Clin Proc*. 2017;92(11): 1625-1635.
42. Oreskovich MR, Shanafelt T, Dyrbye LN, et al. The prevalence of substance use disorders in American physicians. *Am J Addict*. 2015;24(1):30-38.
43. Shanafelt TD, Balch CM, Dyrbye L, et al. Special report: suicidal ideation among american surgeons. *Arch Surg*. 2011;146(1):54-62.
44. Dyrbye LN, Thomas MR, Massie FS, et al. Burnout and suicidal ideation among U.S. medical students. *Ann Intern Med*. 2008; 149(5):334-341.
45. Mata DA, Ramos MA, Bansal N, et al. Prevalence of depression and depressive symptoms among resident physicians: a systematic review and meta-analysis. *JAMA*. 2015;314(22): 2373-2383.
46. Panagioti M, Geraghty K, Johnson J, et al. Association between physician burnout and patient safety, professionalism, and patient satisfaction: a systematic review and meta-analysis [published correction appears in *JAMA Intern Med*. 2019 (Errors in Data Entry and Figures)]. *JAMA Intern Med*. 2018;178(10): 1317-1330.
47. Hamidi MS, Bohman B, Sandborg C, et al. Estimating institutional physician turnover attributable to self-reported burnout and associated financial burden: a case study. *BMC Health Serv Res*. 2018;18(1):851.
48. Shanafelt TD, Mungo M, Schmitgen J, et al. Longitudinal study evaluating the association between physician burnout and changes in professional work effort. *Mayo Clin Proc*. 2016; 91(4):422-431.
49. Windover AK, Martinez K, Mercer MB, Neuendorf K, Boissy A, Rothberg MB. Correlates and outcomes of physician burnout within a large academic medical center. *JAMA Intern Med*. 2018;178(6):856-858.

50. Hamidi MS, Bohman B, Sandborg C, et al. Estimating institutional physician turnover attributable to self-reported burnout and associated financial burden: a case study. *BMC Health Serv Res*. 2018;18(1):851.
51. Association of American Medical Colleges. *2018 Update: The Complexities of Physician Supply and Demand: Projects from 2016 to 2030*. Washington, DC: Association of American Medical Colleges; 2018. Final Report.
52. Kotter JP, Schlesinger LA. Choosing strategies for change. *Hav Bus Rev*. 1979;57(2):106-114.
53. Thomas LR, Ripp JA, West CP. Charter on Physician Well-being. *JAMA*. 2018;319(15):1541-1542.
54. Suchman AL. Organizations as machines, organizations as conversations: two core metaphors and their consequences. *Med Care*. 2011;49(suppl):S43-S48.
55. Shanafelt T, Trockel M, Ripp J, Murphy ML, Sandborg C, Bohman B. Building a program on well-being: key design considerations to meet the unique needs of each organization. *Acad Med*. 2019;94(2):156-161.
56. Shanafelt T, Goh J, Sinsky C. The business case for investing in physician well-being. *JAMA Intern Med*. 2017;177(12):1826-1832.
57. West CP, Dyrbye LN, Satele D, Shanafelt TD. A randomized controlled trial evaluating the effect of COMPASS (COLleagues Meeting to Promote and Sustain Satisfaction) small group sessions on physician well-being, meaning, and job satisfaction. *J Gen Intern Med*. 2015;30:S89.
58. West CP, Dyrbye LN, Rabatin JT, et al. Intervention to promote physician well-being, job satisfaction, and professionalism: a randomized clinical trial. *JAMA Intern Med*. 2014;174(4):527-533.
59. Lown BA, Manning CF. The Schwartz Center Rounds: evaluation of an interdisciplinary approach to enhancing patient-centered communication, teamwork, and provider support. *Acad Med*. 2010;85(6):1073-1081.
60. Kjeldmand D, Holmström I. Balint groups as a means to increase job satisfaction and prevent burnout among general practitioners. *Ann Fam Med*. 2008;6(2):138-145.
61. Kishore S, Ripp J, Shanafelt T, et al. Making the case for the chief wellness officer in America's health systems: a call to action. *Health Affairs*. <https://www.healthaffairs.org/doi/10.1377/hblog20181025.308059/full/>. Published October 26, 2018. Accessed June 20, 2019.
62. Shanafelt TD, Gorringer G, Menaker R, et al. Impact of organizational leadership on physician burnout and satisfaction. *Mayo Clin Proc*. 2015;90(4):432-440.
63. Palmer M, Hoffmann-Longtin K, Walvoord E, Bogdewic SP, Dankoski ME. A competency-based approach to recruiting, developing, and giving feedback to department chairs. *Acad Med*. 2015;90(4):425-430.