



# Physician Stress and Burnout

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## ABSTRACT

Tens (or hundreds) of thousands of Americans die each year as a result of preventable medical errors. Changes in the practice and business of medicine have caused some to question whether burnout among physicians and other healthcare providers may adversely affect patient outcomes. A clear consensus supports the contention that burnout affects patients, albeit with low-quality objective data. The psychological and physical impact on physicians and other providers is quite clear, however, and the impact on the physician workforce (where large shortages are projected) is yet another cause for concern. We have all heard the airplane safety announcement remind us to “Please put on your own oxygen mask first before assisting others.” Unfortunately, like many airline passengers (very few of whom use oxygen masks correctly when they are needed), physicians often do not recognize symptoms of burnout or depression, and even less often do they seek help. We detail the causes and consequences of physician burnout and propose solutions to increase physician work satisfaction.

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“Put on your own oxygen mask before assisting others.”

— Randy Pausch, *The Last Lecture*

## SCOPE AND IMPACT OF PHYSICIAN BURNOUT

Research regarding physician burnout is plagued by large variability in reported prevalence rates and a lack of agreed terminology (a review of 182 studies found at least 142 unique definitions).<sup>1</sup> Most authors suggest a prevalence rate of approximately half; twice that of the general working population in the United States and with an estimated cost of roughly \$5 billion per year related to reduced clinical productivity and increased physician turnover.<sup>2</sup> Some believe the condition to manifest at some level in nearly all physicians.<sup>3</sup>

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The burned-out physician “is angry, irritable, impatient, has increased absenteeism, decreased productivity and decreased quality of care.” Evidence of burnout was found in 42% of 15,000 US physicians who responded to a 2018 online survey. The greatest incidence of burnout (50%) was among physicians 45-54 years old, the age group in which work productivity should peak and practices should be economically stable.<sup>4</sup> Repeated in 2019, the findings were similar, with an overall 44% rate of “feeling burned out,” and an alarming 14% reporting suicidal thoughts. Of those experiencing suicidal thoughts, only one-third sought treatment.<sup>5</sup> Compared with doctoral-level professionals in other fields, physicians work more long hours, are less satisfied with the balance between their professional and personal lives, and experience symptoms of burnout at significantly higher rates.<sup>6</sup>

Burnout is associated with an increased risk of major medical errors.<sup>7</sup> A recent meta-analysis of 47 studies involving more than 42,000 physicians found that physician burnout doubled the risk of adverse patient safety incidents and led to poorer overall quality of care and decreased patient satisfaction.<sup>8</sup> Physicians reporting burnout symptoms work fewer hours and leave clinical medicine at a higher rate than do those not affected.<sup>9</sup> Burnout among primary care physicians also increases turnover, and therefore

costs.<sup>10</sup> Physician burnout and the resultant decreased productivity may exacerbate the previously predicted shortfall of 45,000 to 90,000 physicians in the United States by 2025.<sup>11</sup>

Occupational stress has resulted in concern about burnout rates among emergency room physicians,<sup>12</sup> anesthesiologists,<sup>13</sup> radiologists,<sup>14</sup> general internists,<sup>15</sup> family physicians,<sup>16</sup> oncologists,<sup>17</sup> psychiatrists,<sup>18</sup> general surgeons,<sup>19</sup> trauma surgeons,<sup>20</sup> psychiatrists,<sup>21</sup> cardiologists,<sup>4</sup> dermatologists,<sup>22</sup> obstetrician-gynecologists,<sup>23</sup> gastroenterologists,<sup>24</sup> residents, and even medical students.<sup>25</sup>

In addition to worsened patient outcomes and satisfaction, physician health may be at risk. Recent research has focused on the link between work effort (the effort required to meet job demands) and the reward for job performance. An imbalance in the relationship between effort and reward (effort-reward imbalance, or ERI) has been linked to negative health outcomes. Hypothalamic-pituitary axis dysregulation may be the mechanism by which job stress causes physical illness. Elevated ERI was found to be linked to a significant decrease in peak, average, and total cortisol production among Buffalo, New York, police officers.<sup>26</sup> A very recent study found similar outcomes in a broader population sample.<sup>27</sup> Effort-reward imbalance has been linked to increased risk of depression (odds ratio [OR] 1.49; 1.23-1.80,  $P < .001$ ) in a meta-analysis of 8 cohort studies involving almost 85,000 subjects.<sup>28</sup> In addition, markers of abnormal glucose metabolism are found in physicians with symptoms of burnout.<sup>29</sup> A roughly two-fold increase in the rate of new employment disability was found in individuals with ERI among over 40,000 workers followed for 3 years.<sup>30</sup> Effort-reward imbalance has been associated with increased risk of coronary events in secondary<sup>31</sup> and, more recently, in primary event populations. In the latter case, more than 90,000 European workers were followed prospectively. Those who reported either ERI or job strain had a statistically significant 16% increase in relative risk for symptomatic coronary heart disease, and those who reported both job strain and ERI had a 41% increase in risk for coronary events relative to those workers who reported neither risk factor.<sup>32</sup>

## CAUSES AND SOLUTIONS

Authors have proposed several categories of causal factors in the development of burnout among physicians and review of these reveals several consistent findings. In the 2018 Medscape survey, 56% of physicians who reported burnout cited excess bureaucracy with other causes being long working hours, lack of respect from colleagues,

increasing computerization of practice, insufficient compensation, and a lack of clinical autonomy.<sup>4</sup>

### CLINICAL SIGNIFICANCE

- Burnout affects approximately one-half of physicians in practice.
- Burnout results in medical errors, lower quality of care, higher costs, and overall worse outcomes; the impact of burnout on the physician workforce is substantial.
- Burnout is a system problem, not an individual disease and must be addressed with systematic solutions.
- We will not achieve the goals of the Triple Aim unless we add a fourth goal—to address physician wellness.

### Time

Total time working is less commonly cited as a contributor to burnout than is time spent on non-clinical tasks. This is not unexpected; the mission of the physician (and their natural tendency) is to care for patients, not spend time explaining the need for a particular drug or test, responding to a billing query or explaining to an insurance company why a colonoscopy is needed. In part to address issues of burnout and the impact these have on the primary care physician workforce, the Board of Regents of the American College of Physicians has adopted a formal position paper

focused on decreasing the amount of time physicians spend on non-clinical tasks.<sup>33</sup>

### Information Technology

“I am no longer a physician but the data manager, data entry clerk and steno girl. . . I became a doctor to take care of patients. I have become the typist.”<sup>34</sup>

Information technology-related stress is pervasive (about 70% of survey respondents report it) and independently predicts burnout symptoms in physicians.<sup>35</sup> Electronic medical record (EMR) systems were designed and implemented by technologists, they are not user-friendly, and most employ user interfaces that would be unacceptable in other applications. Steve Jobs would not have tolerated the user interface provided in our EMR by General Electric. General Electric can build the most powerful turbofan engine in history with a thrust exceeding 100,000 pounds (significantly more powerful than the rocket that launched Alan Shepard into Earth’s orbit), but it still takes 14 mouse clicks to refill an antihypertensive medication. Physicians are generally not satisfied with EMR systems. Physicians who use EMRs spend more time on clerical tasks and are felt to be at higher risk for burnout.<sup>36</sup>

Primary care physicians spend on average about 2 hours interacting with an EMR for every hour of patient contact, including 4.5 hours during the clinic day and an additional hour and a half in the evening.<sup>37</sup> Even when in the examination room with a patient, they spend 37% of their time interacting with the EMR rather than the patient.<sup>38</sup>

More after-hours time spent working in EMR charts has been associated with lower satisfaction and higher rates of burnout among primary care physicians<sup>39</sup> and psychiatrists,<sup>40</sup>

and in the latter case, the relationship between EMR time and burnout was stronger than the relationships between EMR time and other factors, including sleep and exercise. Some have suggested that the *primary* root cause of physician burnout is the EMR.<sup>41</sup>

The impact of scribes on burnout has not been studied directly; however, their implementation in primary care decreases the time spent by physicians on EMR documentation tasks and improves physician work efficiency and satisfaction.<sup>42</sup> Furthermore, the use of scribes does not decrease patient satisfaction.<sup>43</sup> One recent study found that the use of scribes in primary care increased the number and intensity of patients seen per hour, increased patient-facing time, increased total physician-patient interaction time, decreased the time physicians spent interacting with a computer, and decreased the after-hours time spent in EMR documentation.<sup>44</sup> Other physician-driven changes in EMR processes may improve usability, patient safety, and physician job satisfaction, and decrease physician burnout.<sup>45</sup>

In a paper entitled, “The Electronic Elephant in the Room,” Philip Kroth and colleagues describe findings of structured interviews on the impact of EMR use on physicians (with the majority reporting EHR proficiency but also regularly spending “excessive” time at home documenting patient details in electronic charts). Concerns included “inefficient user interfaces, unpredictable system response times, poor interoperability between systems and excessive data entry.” The authors proposed organizational changes to improve EMR usability, the adoption of scribes, and “personal resilience strategies” focused on self-care (such as exercise, positive thinking, and consideration of work-life boundaries).<sup>46</sup>

### Other Specific Interventions

Meditation has been used to combat burnout symptoms<sup>47</sup> and mindfulness training<sup>48</sup> may be modestly beneficial in decreasing anxiety and perceived work stress. Some have advocated for the wholesale adoption of Buddhist philosophy in healthcare practitioner wellness and stress management.<sup>49</sup> Individualized professional coaching for stress management was successful over a 6-month pilot trial; however, the outcome may have been influenced by selection bias as the physicians who undertook coaching were volunteers.<sup>50</sup> There is little data to suggest long-term benefit of any particular stress management intervention in the prevention of burnout symptoms,<sup>51</sup> reinforcing the absolute necessity of system-based interventions rather than (or in addition to) those targeted to affected individuals.

### Programmatic Approaches

“I want to be a doctor so that I can see more patients per hour with higher patient satisfaction scores than any of my peers, said no medical school applicant ever.”

Researchers at Penn State University have proposed an approach based on a modification of Maslow’s hierarchy of needs. Their strategy begins with a focus on basic physical and mental health needs and safety, followed by higher-order needs such as respect, appreciation, connection, and process changes in the way physicians interact with electronic systems, including electronic medical records.<sup>52</sup>

Because workplace-related factors are associated with physician burnout,<sup>53</sup> an emphasis on system changes has been suggested.<sup>54</sup> The Mayo Clinic system has taken a proactive approach to include study of physician burnout and the creation of a multi-faceted strategy to address the problem.<sup>55</sup> Though none of the specific interventions are revolutionary (eg, “align values and strengthen culture”) the Mayo approach is remarkably aggressive; the publication referenced was co-authored by the director of the Program on Physician Well-Being and the chief executive officer of the health system.

### BARRIERS TO CHANGE

Burnout symptoms are common among physicians. Depression is much more common among physicians than other professions; among residents training in general surgery, the rate of depression approaches 40%.<sup>56</sup> An earlier study found that more than 6% of surgeons reported suicidal ideations in the prior 12 months (at least double the rate in the general adult population) and of those, only 26% had sought help, largely due to concerns about how seeking treatment could affect their medical license.<sup>57</sup> In addition to fear of professional consequences, physicians report having limited time to seek medical care and stigma associated with treatment for mental illness.<sup>58</sup>

Some authors have noted an overlap between symptoms of post-traumatic stress disorder and burnout.<sup>59</sup> Others believe that burnout is a “depressive condition” and that screening instruments used for depression per se can detect signs of burnout.<sup>60</sup> Among surgeons, burnout (OR 1.910,  $P < .001$ ) and depression (OR 7.012,  $P < .001$ ) were independently associated with suicidal ideations after controlling for personal and professional characteristics.<sup>57</sup> However, depression is a disease, whereas burnout is a syndrome that is job-related and situation-specific.<sup>61</sup> Depression and burnout have common symptoms, which are also shared by hypothyroidism, and these should not be conflated.<sup>62</sup> Others further stress that though potentially challenging, the differentiation between burnout and major depression is critical, particularly given increasing rates of substance misuse and suicide among physicians:

Physicians today experience unprecedented stress and distress, as evidenced by reports of escalating rates of burnout, dissatisfaction with life-work balance and career choice, occurrence of major depressive disorder (MDD) and substance use and misuse, and unacceptable rates of physician suicide. While efforts to ameliorate physician burnout are heartening, a major concern

remains: physician depression and suicide prevention are relatively ignored, in part fueled by the fact that burnout and MDD have overlapping symptoms and clinical features. This imbalance may also reflect the ongoing stigma, even among physicians, of mental illness and its treatment. In contrast, the term *burnout*, which indicates a human reaction to something outside oneself, is less stigmatized, allowing it to become a catchall term for emotional distress. However, erroneously labeling a physician's distress as burnout may prevent or delay appropriate treatment of MDD, a serious and sometimes life-threatening mental disorder.<sup>63</sup>

## DISCUSSION

Driven by changes in health systems, reimbursement pressure, and dramatically increased demand for interaction with electronic systems, physicians are working longer hours and finding less joy in the practice of medicine. The distinction between “burnout” and depression per se is debated, but most authors distinguish between the two and some argue that to not do so places physician health in further jeopardy. That physician burnout has economic and public health consequences is certain; the only controversy lies in quantification of the associated harm. Thomas and colleagues<sup>64</sup> propose a “Charter on Physician Well-being” wherein they detail guiding principles: effective patient care and physician well-being are inexorably linked; physician well-being is related to that of other members of the healthcare team; physician well-being is a quality marker; and physician well-being is a responsibility shared by individuals, organizations, and society.<sup>64</sup>

The often-repeated goals of the Triple Aim (enhancing patient experience, improving population health, and reducing costs) may be unreachable until we recognize and address burnout in healthcare provider, reframing the discussion to include interventions to address physician burnout (a Quadruple Aim strategy).<sup>34</sup> Without our own oxygen mask in place, we cannot help those around us.

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