Utilization Management and Physician Burnout

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ABSTRACT

OBJECTIVE: This study was designed to assess physician experiences with utilization management and burnout and investigate whether they are linked.

STUDY DESIGN: We conducted an electronic survey with items related to demographics, profession, utilization management, burnout, and potential policy solutions.

METHODS: The survey was sent to 7222 physicians working in outpatient settings who were recruited from a large, opt-in database. Outcome measures were responses to categorical and Likert-style survey items related to demographics, utilization management, burnout, and potential policy solutions.

RESULTS: Of 7222 requests sent, 501 physicians completed the survey and were included in the final data set (77% men; mean [SD] age, 57 [9.8] years; mean [SD] years in practice, 24 [8.9]). Of these, 200 were general practitioners and 301 were nonhospital specialists. Physicians indicated that utilization management procedures for prior authorization (81%), step therapy (79%), and nonmedical switching (69%) were major or significant barriers to their clinical and patient care. More than half (52%) reported spending 6 to 21 or more hours per week on paperwork related to health insurance utilization management, 67% had experienced burnout at some point in their careers, and 64% indicated that utilization management had been a contributing factor to feelings of burnout, with an additional 8% citing it as the main factor. Physicians favored streamlining prior authorization practice (77%), requiring step therapy to be based on science (73%), and ensuring that peer-to-peer reviews are done by qualified medical experts (67%).

CONCLUSION: These findings indicate that utilization management has a detrimental impact on physicians and patient care and contributes to physician burnout.

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Utilization management refers to a set of techniques designed to influence patient care decisions to reduce health care costs.[1] These techniques are instituted by organizations (eg, insurers, third-party payers, and health plans) that purchase health care benefits and include practices such as prior authorization, step therapy, and nonmedical switching. Utilization management poses challenges to physicians because it reduces clinical autonomy, contributes to an excessive administrative burden, diverts time from patient care, and delays patient treatment.[2-4]

Importantly, loss of autonomy and excessive administrative burden have been linked to physician burnout,[5,6] a serious and persistent problem characterized by emotional exhaustion and depersonalization.[7] Physician burnout is associated with poorer clinical outcomes for patients, medical errors, and reduced productivity.[8-12] It costs the health care system $4.6 billion annually.[13]

Utilization management restricts physician autonomy through procedures that review, question, and sometimes deny physician recommendations for treating patients. Additionally, utilization management documentation significantly increases physicians' administrative burden. Given these features, it seems likely that utilization management contributes to physician burnout. We developed this survey to investigate physician experiences with utilization management and burnout and to see whether there is a link between them.

METHODS

Survey Description

The electronic survey was developed by 3 of the authors (A.S., A.C., J.C.) and based on published literature related to utilization management and physician burnout and discussions with physicians in advisory and working groups convened by Alliance for Patient Access. The survey included 16 items on demographics, profession, and type of practice; 16 items related to utilization management; 12 items related to burnout; and 2 items related to potential policy solutions to address utilization management. All survey questions and responses are included in a supplemental file (**eAppendix** [eAppendix available at **ajmc.com**]).

The general practice questions ascertained how respondents felt about their jobs and why they pursued careers in medicine, and were included to inform the data collected on physician burnout. The survey also included items requesting quantitative information about administrative burden, as well as items related to utilization management and physician burnout rated on Likert-type scales. Administrative burden questions were based on previous reports of the high administrative burden in health care.[3,14]

TAKEAWAY POINTS

- Physician burnout is a serious condition of emotional exhaustion that has been linked to poorer patient outcomes, reduced productivity, medical errors, and increased financial costs.
- Results of this physician survey show that utilization management has a detrimental impact on physicians and patient care and contributes to physician burnout.
- Revisiting current utilization management strategies may help reduce physician burden and burnout, ultimately contributing to improved patient care and physician retention.

Other items asked participants to rate whether individual utilization management procedures represented a major, significant, or minor barrier or whether they were not a problem in their clinic. This type of 4-point Likert rating scale has been used in previous studies,[15-17] except that the anchor word *moderate* was changed to *significant* to ascertain the strength of the barrier with more certainty (ie, it was reasoned that *moderate* may or may not be perceived as a notable barrier, whereas *significant* was viewed as a definitely notable barrier). Respondents were also asked to indicate whether they strongly agreed, agreed, disagreed, or strongly disagreed with various statements related to utilization management and physician burnout. The statements selected were informed by previous literature[2,7,18] and discussions with physicians in advisory and working groups. The 4-point Likert rating scale from "strongly agree" to "strongly disagree" has been frequently used in the literature on health care burnout.[19-21]

Two policy recommendation items were included to ascertain which policy solutions were favored by respondents. The first was a list of potential mechanisms to address utilization management that was generated based on the authors' extensive experience interacting with physicians in advisory and working groups; a free response option was also included. The second item determined the extent to which respondents agreed with the full restoration of treatment decisions to physicians and patients; this point is central to many policy recommendations.

The survey was designed to take approximately 5 to 10 minutes and was available from June 13 to 23, 2022.

Survey Procedure and Participants

The survey was administered via YouGov, a global public opinion and data company (www.YouGov.com). YouGov maintains a large, prerecruited, opt-in database of people who have given written, informed consent to be contacted periodically for participation in surveys. The YouGov research protocol has been reviewed and approved for Federalwide Assurance (FWA) by HHS (FWA No. 00010960). The data collection and storage procedures used by YouGov have been approved in general by the Western Institutional Review Board (IRB); specific IRB approval was not obtained prior to this study due to the general approval and low-risk nature of the anonymous survey.

Email invitations to participate in the online survey were sent to people in the YouGov database who were previously identified as US-based physicians caring for adult patients in one of the following specialties: family medicine/general practice, dermatology, rheumatology, endocrinology, ophthalmology, gastroenterology, urology, otolaryngology, or sports medicine. Physicians practicing in hospital settings were excluded because this population faces unique challenges that may contribute to burnout, particularly given the timing of the survey's proximity to the COVID-19 pandemic.

We aimed for a sample size of 200 general practitioners and 300 nonhospital specialists. For completing the survey, general practitioners received honoraria of $20 and nonhospital specialists received $40.

Analysis

Following data collection, YouGov performed several quality control measures to ensure that all physicians were attentive. These measures included removing physicians for skipping an excessive number of questions (> 22%) and for completing the survey in a significantly shorter time than the median length of interview for the whole sample (median time, ~ 6 minutes; those finishing in 2.5 minutes or less were removed).

Survey data were summarized with frequency counts, percentages, and means where applicable. The authors did not have access to information that could identify individual participants during or after data collection.

RESULTS

The survey was sent to 7222 physicians; 872 began the survey and 516 completed it. Among the 516 who completed the survey, 501 (6.9% of original total) remained in the final sample; 11 physicians were removed for speeding criteria, and in the quality control check, 4 were removed for missing too many questions.

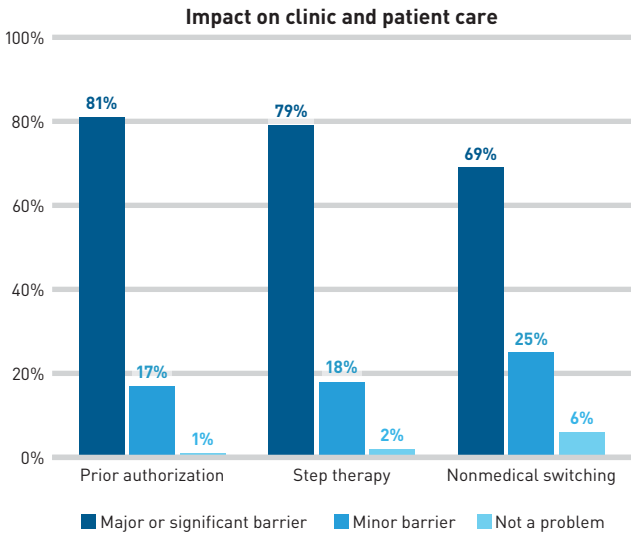
Demographics and Practice Characteristics

Of the 501 physicians, 200 were general practitioners and 301 were nonhospital specialists. Most were in family/general medicine (40%), followed by ophthalmology (14%), dermatology (12%), gastroenterology (10%), endocrinology (9%), urology (6%), otolaryngology (5%), and rheumatology (5%) (percentages may not sum to 100% due to rounding). Per inclusion/exclusion criteria, all physicians worked in the outpatient setting. Most physicians had been practicing between 15 and 35 years (74%) and 14% had been practicing for 35 years or more. Three-fourths (76%) of physicians

TABLE 1. Physician Demographics

	Mean or n (%)
Age in years, mean (SD)	57 (9.8)
Years in practice, mean (SD)	24.4 (8.9)
Sex, n (%)	
Male	386 (77%)
Female	110 (22%)
Nonbinary or other	5 (1%)
Race, n (%)	
White	351 (70%)
Asian	103 (21%)
Black	11 (2%)
Hispanic	11 (2%)
Middle Eastern	8 (2%)
2 or more races	8 (2%)
Native American	2 (< 1%)
Other	7 (1%)

FIGURE. Impact of Prior Authorization, Step Therapy, and Nonmedical Switching on Physicians' Clinics and Patient Care[a]



[a]Percentages of physicians (N = 501) indicating major or significant barrier, minor barrier, or not a problem; percentages may add to less than 100% due to rounding.

indicated that their workplace was privately owned, 21% said their workplace was owned by the local hospital system, and 3% noted they were in workplaces with other ownership. Just over half (51%) worked in clinics that employed 20 people or fewer, 24% in clinics with 21 to 50 people, and 25% in clinics with more than 50 people. Most physicians were male (77%) and White (70%), with 77% aged 40 to 65 years and 19% older than 65 years (**Table 1** and eAppendix).

Attitudes Toward Medical Career

When asked why they pursued medicine as a career, 78% of physicians indicated they wanted to help people and 80% said it was because they were interested in science, medicine, and/or the health care industry. Two-fifths (40%-41%) indicated they wanted to be a force for good, were inspired by a health care provider, found the job security appealing, or found the field's compensation appealing. When asked what they liked about their job, 88% indicated caring for patients; 78%, solving health challenges; 60%, empowering patients and seeing their progress; 60%, learning more about the field; and 53%, working with their colleagues. Most physicians indicated they enjoyed their job at least most of the time (94%) and that the medical profession was what they expected (71%).

Utilization Management

Most physicians indicated that prior authorization, step therapy, and nonmedical switching were major or significant barriers in their clinics and patient care (**Figure**). In a separate question, 77% selected prior authorization as the biggest utilization management barrier their clinic faced, followed by step therapy (14%), nonmedical switching (7%), or other (2%), which included 2 responses of "all 3."

Nearly half (48%) of physicians indicated that they spend 0 to 5 hours per week on paperwork related to health insurance utilization management, with 44% spending 6 to 15 hours, 3% spending 16 to 20 hours, and 5% spending 21 or more hours per week. Each member of physicians' applicable staff spent 0 to 5 hours (20%), 6 to 10 hours (39%), 11 to 15 hours (19%), or 16 more hours (23%) on utilization management paperwork per week. Nearly three-fifths (58%) of physicians had to hire someone to help with the administrative burden of utilization management, and 55% indicated that they and members of their staff separately worked on such paperwork outside of normal working hours several times per week.

Most physicians agreed or strongly agreed with statements describing a negative impact of utilization management on their treatment decisions and relationships with patients (**Table 2**). Notably, 87% of physicians agreed or strongly agreed that utilization management led them to choose an insurer-preferred medication over the one they would have preferred for their patients, and 88% agreed or strongly agreed that their practice could offer better care to patients without the burden of utilization management.

Physician Burnout

Approximately half (48%) of physicians indicated they were currently experiencing burnout. Of those not currently experiencing burnout, 37% had done so in the past, for a total of 67% of physicians having experienced burnout at some point in their careers. Of the 338 physicians who had ever experienced burnout, most reported 1 or more of the following symptoms: emotional exhaustion (82%), lack of enthusiasm for work (74%), decreased satisfaction or sense of accomplishment (67%), physical exhaustion (60%), cynical and/or irritable behavior (52%), disruptions to sleep or diet (48%), apathy (39%), and depression and anxiety (36%). Burnout led physicians

to consider leaving the profession earlier than planned (64%), lose sleep (55%), isolate from friends and family (36%), and think about suicide (4%). In the free response option, individual physicians indicated burnout led to anger and resentment; it also caused them to count the hours until retirement; rush patients through visits, leading to missed diagnoses; leave primary care; and convince students not to go into medicine.

When asked whether utilization management had contributed to feelings of burnout, 64% indicated it has been a contributing factor, 8% reported it was the major factor, and 28% indicated it was a minor or noncontributing factor. A majority of physicians also agreed or strongly agreed with the following statements related to burnout: (1) The burden of utilization management can lead to health care provider burnout (94%); (2) Burnout can worsen physician shortages (97%); (3) Burnout can decrease the quality of a patient's care (95%); and (4) Burnout can hinder the physician-patient relationship (95%). Three-fifths of physicians (61%) indicated they would still have chosen to pursue a career in medicine if they had known about utilization management and the difficulties of burnout, 26% were unsure, and 13% would not.

TABLE 2. Physician Agreement or Disagreement With Statements Describing Negative Impact of Utilization Management on Treatment Decisions and Relationships With Patients (N = 501)[a]

Statement	Strongly agree, n (%)	Agree, n (%)	Disagree, n (%)	Strongly disagree, n (%)
Utilization management disregards my medical expertise when it comes to treatment for my patients.	227 (45%)	237 (47%)	30 (6%)	7 (1%)
Utilization management undermines my relationship with my patients.	171 (34%)	237 (47%)	81 (16%)	12 (2%)
Utilization management takes up time that I would rather spend working one-on-one with patients.	329 (66%)	146 (29%)	21 (4%)	5 (1%)
Without the burden of utilization management, my practice could offer better care to patients.	246 (49%)	197 (39%)	50 (10%)	8 (2%)
Utilization management makes me enjoy my job less.	256 (51%)	197 (39%)	32 (6%)	16 (3%)
Utilization management has led me to choose insurer-preferred medication over the one I'd prefer to have.	203 (41%)	232 (46%)	60 (12%)	6 (1%)
Utilization management can lead to the consolidation of physician practices.	117 (23%)	249 (50%)	125 (25%)	10 (2%)
Utilization management makes me less effective at caring for patients.	185 (37%)	226 (45%)	81 (16%)	9 (2%)
Utilization management complicates treatment decisions.	245 (49%)	228 (46%)	26 (5%)	2 (0%)
Utilization management reduces my workplace's effectiveness.	220 (44%)	236 (47%)	40 (8%)	5 (1%)

[a]All rows may not total 100% due to rounding.

Policy Recommendations

In response to the statement that policies should restore treatment decisions fully to physicians and their patients, 64% strongly agreed and 33% agreed. When asked to check which actions policy makers should take to help address utilization management, most physicians checked the following statements: (1) streamline the prior authorization process (77%); (2) require step therapy be based on science rather than health insurers' financial motives (73%); (3) ensure peer-to-peer review is done by a qualified medical expert (67%); (4) exempt a patient's medication from step therapy if it was tried under a previous insurer (64%); and (5) create a straightforward appeals process (63%). Twenty physicians provided open-ended responses, the most frequent being that the prior authorization process and/or utilization management should be eliminated (n = 8 of 20 free responses). Several others favored standardization among insurers.

DISCUSSION

Overall, physicians in the survey entered the field to help people and because of a genuine interest in science, medicine, or health. Half were experiencing burnout, which most agreed can hinder the patient-physician relationship, decrease the quality of patient care, and worsen physician shortages. Most physicians agreed that the burden of utilization management can lead to health care provider burnout and that utilization management contributed to or was the main factor for their burnout. Utilization management was believed to disregard physicians' medical expertise, undermine relationships with patients, take time that could be better spent with patients, and make physicians less effective at caring for patients.

These findings are in line with those of other reports documenting the detrimental impact of utilization management on physicians and patients. A 2021 survey of 742 office-based physicians found that 82% decided against prescribing certain treatments in anticipation of drug utilization management at least half the time.[22] In a 2021 survey of more than 1000 US physicians conducted by the American Medical Association (AMA), 56% indicated prior authorization was associated with care delays often or always, 34% reported prior authorization had led to a serious adverse event for a patient in their care, and 24% said that prior authorization had led to a patient's hospitalization.[4] In a survey of 353 members of the American Association of Hip and Knee Surgeons, 93% indicated a high administrative burden for prior authorization and 87% reported negative clinical outcomes due to prior authorization, which included delays in access to care.[23]

The present results on physician burnout echo findings from other studies, with a prevalence of approximately 50% commonly reported for both trainees and practicing physicians in the US.[24-27]

A 2021 survey by the AMA, Mayo Clinic, and Stanford Medicine found that physician burnout increased to 63% in 2021, up from 38% to 54% over the previous decade, likely reflecting COVID-19–related challenges.[28] These rates are higher than those in other fields[26] and are associated with exhaustion, disruptions to sleep and diet, apathy, depression, and anxiety as identified in this and other studies.[29] Physician burnout is also associated with lower patient satisfaction, longer recovery times, self-reported medical errors, and reduced patient safety.[8,10,12]

In addition to the negative impact of physician burnout on physicians and patients, the present survey also found burnout led nearly two-thirds of physicians to consider leaving the profession earlier than planned. If acted upon, this would dramatically worsen the current physician shortage in the US.[30] HHS reports that 76 million Americans currently live in health care provider shortage areas, with only 57% of primary care needs being met and 13,290 primary care practitioners needed to meet them.[31] According to a report by the Association of American Medical Colleges, physician demand is expected to continue growing over the next decade, leading to a total estimated shortfall ranging from 46,900 to 121,900 physicians by 2032.[30]

The present results identified an association between utilization management and physician burnout. In a 2020 viewpoint article, Hartzband and Groopman recalled literature describing autonomy, competence, and relatedness as the 3 pillars of workplace intrinsic motivation and psychological well-being.[18,32] Research with physicians supports these concepts, finding that intrinsic factors such as loss of autonomy, control, and work meaningfulness drive burnout.[7,33] Extrinsic factors such as administrative burden and inefficient work processes and environments also contribute to physician burnout.[7,29,34] Utilization management techniques reduce physician autonomy and control by inserting payers as gatekeepers between physician-selected treatments and patients' receipt of those treatments. Moreover, utilization management requirements differ among payers, contributing to inefficiency and administrative work, and are subject to policy changes into which physicians have no input—further eroding physician control. Thus, utilization management techniques likely contribute to physician burnout on both intrinsic and extrinsic levels.

To date, attempts to reduce burnout have focused primarily on physicians themselves, including programs targeting exercise, relaxation, social interactions, and increased productivity, with limited success.[18] However, interventions that focus on the health care system instead of physicians are more successful in reducing burnout.[35] Among the steps for improving utilization management process included in the present survey, most physicians agreed that the prior authorization process should be streamlined, step therapy should be based on science, peer-to-peer review should be performed by qualified medical experts, medications should be exempt from step therapy if tried under a previous insurer, and a straightforward appeals process should be implemented. These concrete recommendations support those outlined by the American College of Physicians in their position paper on reducing administrative tasks in health care with the goal of putting patients first.[3]

Limitations

This study has several limitations, including a relatively low response rate of 6.9%. Although this response rate was lower than obtained in some physician surveys,[36] it is generally in line with the 8.9% response rate across multiple surveys conducted by the American Board of Internal Medicine before initiating reminder emails.[37] This response rate was not unexpected given the numerous demands on physicians' time that are the subject of the present survey. Additionally, the 52% burnout rate found in the present study is comparable to previous reports,[24-27] suggesting that this outcome was not unduly affected by response rate. Another limitation of the present survey is that it only included physicians who elected to participate in the YouGov data collection platform; participating physicians may be more facile with computerized surveys and/or more accepting of electronic surveys in general. An additional limitation and potential source of bias in the present survey is that the utilization management survey items were statements describing a negative impact of utilization management. Although respondents could disagree with the negative impact statements, the survey did not provide structured questions or statements related to potential benefits of utilization management. In a similar vein, physicians who were more dissatisfied with utilization management practices and/or experiencing burnout may have been more likely to participate in the survey. Finally, most participants in the study were men (77%) and White (70%). All these factors limit the generalizability of the results obtained.

CONCLUSION

Overall, the results of this survey add to a growing literature documenting high rates of physician burnout and the detriments of utilization management, finding a specific link between the two. Strategies designed to restore physician autonomy and improve physicians' administrative burdens are urgently needed. ■

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REFERENCES

1. Gray BH, Field MJ eds. *Controlling Costs and Changing Patient Care? The Role of Utilization Management*. National Academies Press (US); 1989. Accessed October 8, 2024. https://www.ncbi.nlm.nih.gov/pubmed/25144100.1989
2. Wickizer TM, Lessler D. Utilization management: issues, effects, and future prospects. *Annu Rev Public Health*. 2002;23:233-254. doi:10.1146/annurev.publhealth.23.100901.140529
3. Erickson SM, Rockwern 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. doi:10.7326/M16-2697
4. 2021 AMA prior authorization (PA) physician survey. AMA. 2022. Accessed October 8, 2024. https://apps.legislature.ky.gov/CommitteeDocuments/7/20788/10%2026%202022%20Tailor%20-%202021%20AMA%20Physician%20Prior%20Auth%20Survey.pdf
5. Peccoralo LA, Kaplan CA, Pietrzak RH, Charney DS, Ripp JA. The impact of time spent on the electronic health record after work and of clerical work on burnout among clinical faculty. *J Am Med Inform Assoc*. 2021;28(5):938-947. doi:10.1093/jamia/ocaa349
6. Friedberg MW, Chen PG, Van Busum KR, et al. Factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy. *Rand Health Q*. 2014;3(4):1.
7. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. *J Intern Med*. 2018;283(6):516-529. doi:10.1111/joim.12752
8. Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and medical errors among American surgeons. *Ann Surg*. 2010;251(6):995-1000. doi:10.1097/SLA.0b013e3181bfdab3
9. West CP, Huschka MM, Novotny PJ, et al. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. *JAMA*. 2006;296(9):1071-1078. doi:10.1001/jama.296.9.1071
10. Halbesleben JRB, Rathert C. Linking physician burnout and patient outcomes: exploring the dyadic relationship between physicians and patients. *Health Care Manage Rev*. 2008;33(1):29-39. doi:10.1097/01.HMR.0000304493.87898.72
11. 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. doi:10.1016/j.mayocp.2016.02.001
12. Welp A, Meier LL, Manser T. Emotional exhaustion and workload predict clinician-rated and objective patient safety. *Front Psychol*. 2014;5:1573. doi:10.3389/fpsyg.2014.01573
13. Han S, Shanafelt TD, Sinsky CA, et al. Estimating the attributable cost of physician burnout in the United States. *Ann Intern Med*. 2019;170(11):784-790. doi:10.7326/M18-1422
14. Murray A, Montgomery JE, Chang H, Rogers WH, Inui T, Safran DG. Doctor discontent. A comparison of physician satisfaction in different delivery system settings, 1986 and 1997. *J Gen Intern Med*. 2001;16(7):452-459. doi:10.1046/j.1525-1497.2001.016007452.x
15. McCarty CA, McKay R, Keeffe JE. Management of diabetic retinopathy by Australian optometrists. Working Group on Evaluation of NHMRC Retinopathy Guideline Distribution. National Health and Medical Research Council. *Aust N Z J Ophthalmol*. 1999;27(6):404-409. doi:10.1046/j.1440-1606.1999.00263.x
16. Himelhoch S, Riddle J, Goldman HH. Barriers to implementing evidence-based smoking cessation practices in nine community mental health sites. *Psychiatr Serv*. 2014;65(1):75-80. doi:10.1176/appi.ps.201200247
17. Zolezzi M, Abdallah O, Aden S, Major S, White D, El-Awaisi A. Perceived preparedness of health care students for providing cardiovascular disease risk assessment and management. *Pharmacy (Basel)*. 2017;5(1):9. doi:10.3390/pharmacy5010009
18. Hartzband P, Groopman J. Physician burnout, interrupted. *N Engl J Med*. 2020;382(26):2485-2487. doi:10.1056/NEJMp2003149
19. Harris DA, Haskell J, Cooper E, Crouse N, Gardner R. Estimating the association between burnout and electronic health record-related stress among advanced practice registered nurses. *Appl Nurs Res*. 2018;43:36-41. doi:10.1016/j.apnr.2018.06.014
20. Van Bogaert P, Kowalski C, Weeks SM, Van Heusden D, Clarke SP. The relationship between nurse practice environment, nurse work characteristics, burnout and job outcome and quality of nursing care: a cross-sectional survey. *Int J Nurs Stud*. 2013;50(12):1667-1677. doi:10.1016/j.ijnurstu.2013.05.010
21. Tan BYQ, Kanneganti A, Lim LJH, et al. Burnout and associated factors among health care workers in Singapore during the COVID-19 pandemic. *J Am Med Dir Assoc*. 2020;21(12):1751-1758.e5. doi:10.1016/j.jamda.2020.09.035
22. Edwards ML, Yin PT, Kuehn M, et al. Physician perceptions of drug utilization management: results of a national survey. *PLoS One*. 2022;17(9):e0274772. doi:10.1371/journal.pone.0274772
23. Pereira DE, Kamara E, Krueger CA, et al. Prior authorization in total joint arthroplasty: a survey of the American Association of Hip and Knee Surgeons membership. *J Arthroplasty*. 2023;38(7):1203-1208.e3. doi:10.1016/j.arth.2023.01.022
24. West CP, Shanafelt TD, Kolars JC. Quality of life, burnout, educational debt, and medical knowledge among internal medicine residents. *JAMA*. 2011;306(9):952-960. doi:10.1001/jama.2011.1247
25. Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med*. 2014;89(3):443-451. doi:10.1097/ACM.0000000000000134
26. 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. doi:10.1001/archinternmed.2012.3199
27. Allegra CJ, Hall R, Yothers G. Prevalence of burnout in the U.S. Oncology community: results of a 2003 survey. *J Oncol Pract*. 2005;1(4):140-147. doi:10.1200/JOP.2005.1.4.140
28. 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 2020. *Mayo Clin Proc*. 2022;97(3):491-506. doi:10.1016/j.mayocp.2021.11.021
29. Shanafelt TD, Dyrbye LN, West CP. Addressing physician burnout: the way forward. *JAMA*. 2017;317(9):901-902. doi:10.1001/jama.2017.0076
30. The complexities of physician supply and demand: projections from 2017-2032. Association of American Medical Colleges. April 2019. Accessed October 8, 2024. https://specialtydocs.org/wp-content/uploads/2019/06/2019_update_-_the_complexities_of_physician_supply_and_demand_-_projections_from_2017-2032.pdf
31. Health Workforce Shortage Areas. Health Resources and Services Administration. October 7, 2024. Accessed October 8, 2024. https://data.hrsa.gov/topics/health-workforce/shortage-areas.
32. Gagné M, Deci EL. Self-determination theory and work motivation. *J Organiz Behav*. 2005;26:331-362. doi:10.1002/job.322
33. Sedhom JA, Patnaik JL, McCourt EA, et al. Physician burnout in ophthalmology: U.S. survey. *J Cataract Refract Surg*. 2022;48(6):723-729. doi:10.1097/j.jcrs.0000000000000837
34. 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. doi:10.1016/j.mayocp.2016.05.007
35. 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. doi:10.1001/jamainternmed.2016.7674
36. Delnevo CD, Singh B. The effect of a web-push survey on physician survey responses rates: a randomized experiment. *Surv Pract*. 2021;14(1):10.29115/sp-2021-0001. doi:10.29115/sp-2021-0001
37. Barnhart BJ, Reddy SG, Arnold GK. Remind me again: physician response to web surveys: the effect of email reminders across 11 opinion survey efforts at the American Board of Internal Medicine from 2017 to 2019. *Eval Health Prof*. 2021;44(3):245-259. doi:10.1177/01632787211019445

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