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# Physician burnout during the COVID-19 pandemic

Possible interventions for addressing high burnout rates among physicians include providing higher financial remuneration, improving patient access to resources, enhancing staff support, and providing better support for work-life balance.

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## ABSTRACT

**Background:** Physician burnout is associated with reduced quality of care and patient satisfaction and increased costs. We sought to quantify professional fulfillment levels and burnout rates and identify drivers of burnout among physicians within Vancouver Coastal Health during the COVID-19 pandemic.

**Methods:** Members of the Vancouver Physician Staff Association were surveyed in the fall of 2020. The Stanford Professional Fulfillment Index was used to assess physician professional fulfillment and burnout. Physicians were also asked to assess the effect of the COVID-19 pandemic on their physical and mental health, determine psychological safety within their department, and identify interventions to improve their well-being.

**Results:** Of the 1949 physicians contacted, 566 (29%) responded to the survey. Results were analyzed for 84% of the responses (475/566); the completion rate was 24% (475/1949). The overall professional fulfillment level was 25.3%, and the overall burnout rate was 51.4%. Interventions that physicians felt would improve their well-being included providing higher financial remuneration, improving patient access to resources, enhancing staff support, and providing coaching sessions and better support for work-life balance.

**Conclusions:** Further work is needed at every level—individual, departmental, and systemic—to address physician burnout. It is our hope that these survey results will help drive systemic, cultural, and organizational changes to improve physician well-being.

## Background

Physician burnout, a growing concern, has been defined as a work-related syndrome characterized by exhaustion, cynicism, and reduced effectiveness.<sup>1</sup> Burnout is associated with reduced quality of care and patient satisfaction.<sup>2-5</sup> National studies conducted in the United States during the 2010s documented a physician burnout rate of at least 50%.<sup>6,7</sup> A Canadian Medical Association survey conducted in 2018 reported a physician burnout rate of 30%.<sup>8</sup> In this study, we sought to determine professional fulfillment levels and burnout rates among physicians working within the Vancouver Coastal Health Authority during the COVID-19 pandemic, identify the drivers of burnout, assess the effect of COVID-19 on physician well-being, and examine psychological safety within different medical departments.

British Columbia has a population of approximately 5 million and is served by seven health authorities, including Vancouver Coastal Health. The largest community of care within Vancouver Coastal Health is Vancouver Acute/Vancouver Community,

which employs more than 1900 physicians and comprises care provided by Vancouver General Hospital, UBC Hospital, GF Strong Rehabilitation Centre, and Vancouver Community. Our community of care is the largest in both British Columbia and Western Canada and is the second largest in Canada. In 2016, the Vancouver Physician Staff Association was formed to bolster the activities of the medical staff association representing these physicians. It seeks to increase meaningful physician involvement in creating an optimal work environment for the delivery of patient care.

In 2019, several physicians in the Vancouver Physician Staff Association raised the issue of burnout. The Vancouver Coastal Health senior executive team responded by partnering with the Vancouver Physician Staff Association to establish a steering committee to address physician burnout. As a first step, the steering committee designed and administered the 2020 survey to measure physician professional fulfillment and burnout, examine drivers of burnout, and assess psychological safety within departments.

## Methods

### Survey design and administration

After conducting a systematic review of the literature, we selected the Stanford Professional Fulfillment Index<sup>9</sup> to assess physician professional fulfillment and burnout. The Stanford Professional Fulfillment Index is a 16-item instrument and includes three scales: professional fulfillment, work exhaustion, and interpersonal disengagement. The professional fulfillment scale is used to assess the degree of positive intrinsic reward the individual derives from their work, including happiness, meaningfulness, contribution, self-worth, satisfaction, and feelings of control when dealing with difficult problems at work. The work exhaustion scale is used to assess symptoms of exhaustion and is analogous to the emotional exhaustion scale of the Maslach Burnout Inventory. The interpersonal disengagement scale is used to assess empathy and connectedness

with others, particularly patients and colleagues. Burnout is assessed by combining the work exhaustion and interpersonal disengagement scales.

Two other questions were included in the survey to assess the effect of the COVID-19 pandemic on physician wellness. Respondents were asked to compare their physical and mental health at the time

**The Vancouver Physician Staff Association . . . seeks to increase meaningful physician involvement in creating an optimal work environment for the delivery of patient care.**

of the survey to that prior to the pandemic and then choose the top five options from two lists of interventions they thought would best improve their workplace and personal well-being. Interventions included “a lighter workload,” “a more efficient electronic medical record,” and “a longer vacation.” These interventions were adapted from a list of drivers of burnout based on the Mayo Clinic’s wellness framework.<sup>1</sup> Respondents could also enter their own interventions. Finally, respondents were asked two questions about psychological safety within their department in order to develop future strategies for reducing burnout. Psychological support was available to all physicians who participated in the survey.

The draft survey was field-tested by the 15 physician members of the Vancouver Acute/Vancouver Community Physician Wellness Steering Committee via SurveyMonkey, and their feedback was used to create the final survey. In compliance with health authority privacy guidelines, the link to the final survey via SurveyMonkey was emailed to the Vancouver Physician Staff Association membership of 1949 physicians in the fall of 2020. The survey was promoted via a series of events from October to November 2020, including weekly Vancouver

Physician Staff Association email communications, wellness posters, and departmental emails. Respondents were given 4 weeks to complete the survey.

### Survey analysis

All survey responses were anonymous. Standard descriptive statistics were used to describe professional fulfillment and burnout scores, the effect of COVID-19 on wellness, workplace and personal well-being interventions, and psychological safety. Within the 16-item Stanford Professional Fulfillment Index, respondents could score 0 to 4 for each item, with 0 being complete disagreement with the statement and 4 being complete agreement. Scores for each scale were calculated by averaging the scores of all the items within the scale.

Dichotomous burnout categories (burnout vs no burnout) were determined from the average item score across the work exhaustion and interpersonal disengagement scales; an average score of 1.33 or higher was defined as burnout. Dichotomous professional fulfillment categories (professionally fulfilled vs not professionally fulfilled) were determined from the average item score within the professional fulfillment scale; an average score of 3.0 or lower was defined as not professionally fulfilled. Respondents who answered fewer than 50% of the items for any scale were deemed to have provided inadequate data, so their responses were removed from the final analysis. Responses from respondents who did not consent to including their data in the final analysis were also removed. Thematic analyses were conducted on all qualitative data.

The University of British Columbia Clinical Research Ethics Board deemed this study to be a quality improvement project; therefore, it was exempt from ethics review under Guidance Note 4.4.1.

### Results

Of the 1949 physicians who received the survey, 566 (29%) responded. The responses of 91 of those participants were removed, which resulted in 475 responses analyzed (24% completion rate). There was

considerable variation in survey completion rates across departments [Table]. Emergency medicine physicians had the highest completion rate (58%), followed closely by anesthesiologists (56%). The department of medicine had the lowest completion rate (10%).

The overall level of professional fulfillment was 25.3%. Pathology and laboratory medicine physicians had the highest level of professional fulfillment (35.0%); family practice physicians had the lowest (22.3%) [Figure 1].

The overall burnout rate was 51.4%. Family practice physicians had the highest rate (63.1%); pathology and laboratory medicine physicians had the lowest (40.0%) [Figure 2].

Participants were asked to rate their mental and physical health at the time of the survey compared with before the pandemic. Sixty-four percent indicated that their mental health was “slightly worse” or “much worse” than before the pandemic; 51% said their physical health was “slightly worse” or “much worse.”

The top five interventions chosen by physicians to improve mental well-being were “more resources available for my patients,” “higher remuneration,” “more efficient electronic medical record,” “more control of my work environment,” and “more support staff at work.” The top five interventions chosen to improve personal well-being were “system change to allow for better support of work-life balance,” “more financial support,” “personal fitness training,” “coaching sessions,” and “more physical activities facilitated outside of work.”

In terms of psychological safety within their department, 29% of physicians disagreed or strongly disagreed that they felt safe to express their opinions to their department/division members, and 23% disagreed or strongly disagreed that they were able to bring up problems and tough issues.

Analysis of the qualitative data from the survey revealed some recurring themes: high workload is a significant stressor; there is a need for more patient resources; trust, respect, and accountability between

TABLE. Survey completion rates by department (n = 475).

Department	Number of respondents	Survey completion rate (%)
Overall	475	24
Emergency medicine	57	58
Anesthesia	49	56
Diagnostic imaging/radiology	15	28
Pathology and laboratory medicine	20	26
General/family practice (including community physicians)	130	21
Psychiatry	52	20
Ophthalmology	15	19
Gynecology/obstetrics	15	18
Orthopaedics	10	18
Surgery	29	17
Medicine	55	10
Unidentified	28	N/A

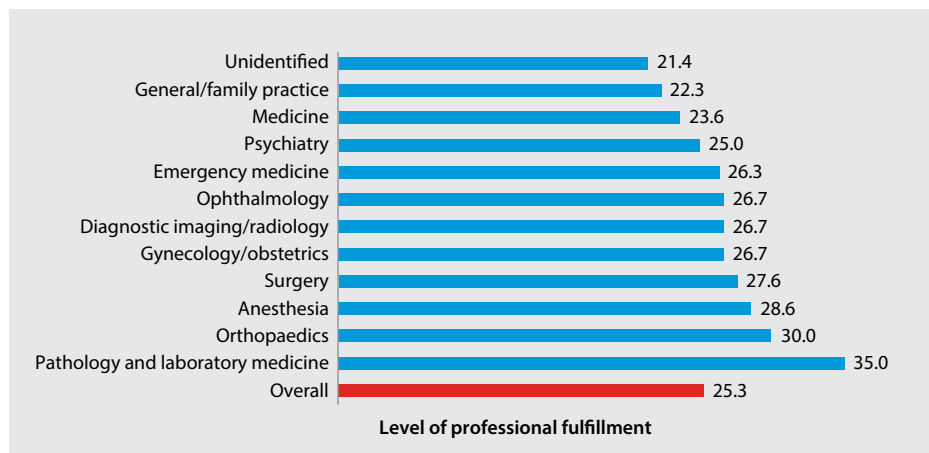


FIGURE 1. Professional fulfillment levels by department (n = 475).

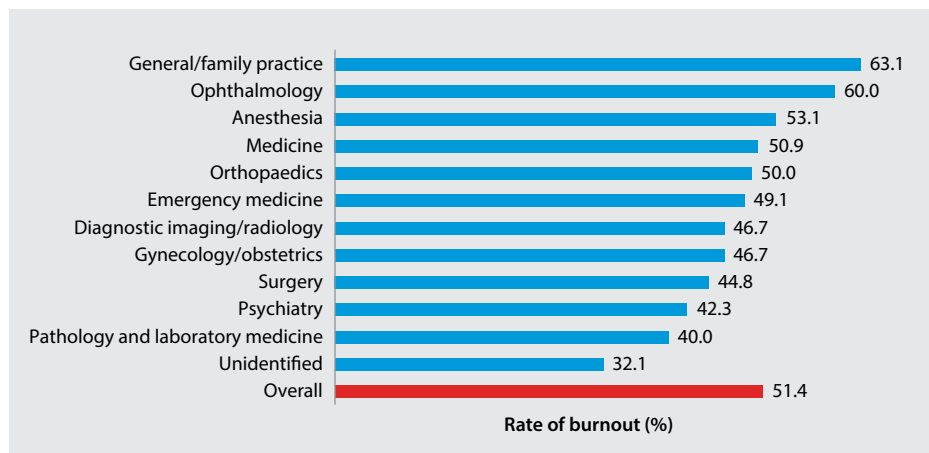


FIGURE 2. Burnout rates by department (n = 475).

physicians and leadership is essential; good communication and psychological safety are needed; and physician recognition, wellness resources, and diversity, equity, and inclusion initiatives are vital.

## Discussion

Increasingly, health care institutions are embracing the quadruple aim,<sup>10</sup> which emphasizes the need for the best patient experience, better outcomes, lower costs, and the best clinician experience. Best clinician experience, in particular, seeks to improve the well-being of health care staff, because higher burnout rates are correlated with poorer patient experience,<sup>5,11</sup> poorer outcomes,<sup>12-14</sup> and increased costs.<sup>15</sup>

We chose to administer the Stanford Professional Fulfillment Index because its burnout measures correlate highly with the Maslach Burnout Inventory.<sup>9</sup> Furthermore, the Stanford Professional Fulfillment Index is easy to administer and captures a broad assessment of physician well-being by focusing on both physician burnout and professional fulfillment within the preceding 2 weeks, and it can be readministered on a regular basis to assess the effectiveness of wellness interventions.

The overall rate of physician burnout in our survey (51.4%) was higher than that of some recent national surveys. In a 2018 Canadian Medical Association survey, the burnout rate was 30.0%.<sup>8</sup> In a national survey conducted in the United States in 2020 during the COVID-19 pandemic, the overall burnout rate was 42.0%, but there was variation in burnout rates between specialties.<sup>16</sup> The COVID-19 pandemic has brought unprecedented challenges to the health care profession and may affect different specialties in different ways and to varying degrees. Most respondents in our survey felt that their mental and physical health had deteriorated since the start of the pandemic.

In other studies,<sup>17</sup> lower professional fulfillment was generally correlated with higher burnout. In our study, interventions that physicians selected to improve well-being included recommendations for

organizational change to improve patient access to resources and to enhance staff support, as well as for coaching sessions and better support for work-life balance. Physicians also indicated that inadequate financial remuneration was a source of burnout. Physician wellness is a shared responsibility, and organizational support is key.<sup>18</sup> The Mayo Clinic Program on Physician Well-Being identified seven drivers of phy-

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sician burnout and engagement: workload and job demands, efficiency and resources, meaning in work, organizational culture and values, control and flexibility, social support and community at work, and work-life integration.<sup>1</sup> Many individual wellness strategies, including mindfulness training and self-care workshops, have helped physicians combat stress.<sup>19</sup> However, although important, individual physician wellness programs will not reduce burnout on their own<sup>20,21</sup> and must occur in conjunction with organizational strategies. Four organizational strategies for reducing burnout are developing quality leaders, creating a supportive community and organizational culture, improving practice efficiency, and optimizing administrative policies.<sup>18</sup>

Themes identified in our survey include the importance of trust and respect between physicians and leadership and the need for clear communication; psychological safety; and diversity, equity, and inclusion initiatives. In our survey, 29% of respondents did not feel safe to express their opinions to department/division heads and fellow members, which indicates this is an area that needs additional attention. Psychological

safety is the foundation wellness and organizational resilience are built on, and the level of psychological safety will help direct strategies to reduce burnout. Ensuring that the best diversity, equity, and inclusion practices are established will also promote psychological safety.<sup>22</sup>

In recognition that physician wellness is a growing issue, the Canadian Medical Association has recommended the development of a national service to support the mental health of physicians.<sup>23</sup> In BC, the Physician Health Program, which is available to all physicians, medical students, and residents, as well as their partners and children, provides a 24-hour confidential help line to address issues related to mental health, relationship stress, and career and life transitions. In Vancouver Coastal Health, during the COVID-19 pandemic, physicians also had access to an employee and family assistance program. Recently, a new model of wellness-centred leadership has been proposed, which recognizes that leadership directly affects physician wellness.<sup>24</sup> Wellness-centred leadership emphasizes the need to “care about people always, cultivate individual and team relationships, and inspire change.”<sup>24</sup> To this end, we are thankful for the collaborative partnership between our medical staff association and regional health authority leaders that allowed us to design, distribute, and analyze this survey.

## Study limitations

Due to the confidential nature of our survey and because some departments were quite small, we elected not to collect age, gender, and other personal data to ensure anonymity. This limited our ability to identify demographic factors associated with professional fulfillment and burnout. Also, recall bias may have factored into physician responses; however, we believe that its effect was limited because we used the Stanford Professional Fulfillment Index, which asks physicians to respond to questions based on their experiences in the previous 2 weeks, whereas the Maslach Burnout Inventory focuses on the previous 12 months.

Our survey completion rate was 24%, which is consistent with other large wellness surveys.<sup>25,26</sup> Response rates varied between 10% and 58% depending on the department. It is possible that the overall burnout rate may not be representative of our entire physician group. Finally, our survey was limited to members of Vancouver Acute/Vancouver Community; therefore, our findings may not be representative of physicians in other communities of care in BC.

## Conclusions

In our survey, the physician burnout rate was unacceptably high. This not only affects physician health but also detrimentally affects patient outcomes. During the COVID-19 pandemic, physician mental and physical health worsened. In collaboration with senior health authority leadership and with support from Doctors of BC, we were able to quantify burnout rates and are now planning data-driven departmental wellness initiatives. Remaining challenges include developing strategies to meet the varying needs of vastly different departments and establishing a central strategic plan and office for physician wellness at the regional level. ■

## Competing interests

None declared.

## Acknowledgments

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## References

- Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: Nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin Proc* 2017;92:129-146.
- West CP, Huschka MM, Novotny PJ, et al. Association of perceived medical errors with resident distress and empathy: A prospective longitudinal study. *JAMA* 2006;296:1071-1078.
- Williams ES, Manwell LB, Konrad TR, Linzer M. The relationship of organizational culture, stress, satisfaction, and burnout with physician-reported error and suboptimal patient care: Results from the MEMO study. *Health Care Manage Rev* 2007;32:203-212.
- Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and medical errors among American surgeons. *Ann Surg* 2010;251:995-1000.
- Haas JS, Cook EF, Puopolo AL, et al. Is the professional satisfaction of general internists associated with patient satisfaction? *J Gen Intern Med* 2000;15:122-128.
- 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;172:1377-1385.
- 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. *Mayo Clin Proc* 2015;90:1600-1613.
- Canadian Medical Association. CMA national physician health survey: A national snapshot. Ottawa, ON: CMA, 2018. Accessed 20 November 2021. <https://cma.ca/sites/default/files/2018-11/nph-survey-e.pdf>.
- Trockel M, Bohman B, Lesure E, et al. A brief instrument to assess both burnout and professional fulfillment in physicians: Reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. *Acad Psychiatry* 2018;42:11-24.
- Sikka R, Morath JM, Leape L. The quadruple aim: Care, health, cost and meaning in work. [editorial] *BMJ Qual Safe* 2015;24:608-610.
- Linn LS, Brook RH, Clark VA, et al. Physician and patient satisfaction as factors related to the organization of internal medicine group practices. *Med Care* 1985;23:1171-1178.
- Williams ES, Skinner AC. Outcomes of physician job satisfaction: A narrative review, implications, and directions for future research. *Health Care Manage Rev* 2003;28:119-139.
- Scheepers RA, Boerebach BCM, Arah OA, et al. A systematic review of the impact of physicians' occupational well-being on the quality of patient care. *Int J Behav Med* 2015;22:683-698.
- Linzer M, Poplauer S, Brown R, et al. Do work condition interventions affect quality and errors in primary care? Results from the Healthy Work Place Study. *J Gen Intern Med* 2017;32:56-61.
- Dewa CS, Jacobs P, Thanh NX, Loong D. An estimate of the cost of burnout on early retirement and reduction in clinical hours of practicing physicians in Canada. *BMC Health Serv Res* 2014;14:254.
- Kane L. Death by 1000 cuts: Medscape national physician burnout and suicide report 2021. 2021. Accessed 15 November 2022. [www.medscape.com/slideshow/2021-lifestyle-burnout-6013456](http://www.medscape.com/slideshow/2021-lifestyle-burnout-6013456) (login required).
- Burns KEA, Pattani R, Lorens E, et al. The impact of organizational culture on professional fulfillment and burnout in an academic department of medicine. *PLoS One* 2021;16:e0252778.
- Tawfik DS, Profit J, Webber S, Shanafelt TD. Organizational factors affecting physician well-being. *Curr Treat Options Pediatr* 2019;5:11-25.
- Locke R, Lees A. A literature review of interventions to reduce stress in doctors. *Perspect Public Health* 2020;140:38-53.
- Williams D, Tricomi G, Gupta J, Janise A. Efficacy of burnout interventions in the medical education pipeline. *Acad Psychiatry* 2015;39:47-54.
- 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.
- Aranzamendez G, James D, Toms R. Finding antecedents of psychological safety: A step toward quality improvement. *Nurs Forum* 2015;50:171-178.
- Canadian Medical Association. CMA recommendations for: Emergency federal measures to care for and protect Canadians during the COVID-19 pandemic. Ottawa, ON: CMA, 2020. Accessed 5 January 2023. [www.cma.ca/sites/default/files/pdf/Media-Releases/CMA-Brief-federal-emergency-measures-pandemic.pdf](http://www.cma.ca/sites/default/files/pdf/Media-Releases/CMA-Brief-federal-emergency-measures-pandemic.pdf).
- Shanafelt T, Trockel M, Rodriguez A, Logan D. Wellness-centered leadership: Equipping health care leaders to cultivate physician well-being and professional fulfillment. *Acad Med* 2021;96:641-651.
- Gribben JL, MacLean SA, Pour T, et al. A cross-sectional analysis of compassion fatigue, burnout, and compassion satisfaction in pediatric emergency medicine physicians in the United States. *Acad Emerg Med* 2019;26:732-743.
- Lin M, Battaglioli N, Melamed M, et al. High prevalence of burnout among US emergency medicine residents: Results from the 2017 National Emergency Medicine Wellness Survey. *Ann Emerg Med* 2019;74:682-690.

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