CMA 2021
National Physician Health Survey

Comparison of Geographic Locations: Urban/Suburban vs. Small Town/Rural/ Remote Areas

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ASSOCIATION MÉDICALE CANADIENNE
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Introduction

The National Physician Health Survey (NPHS), conducted by the Canadian Medical Association (CMA), aims to shed light on the health and wellness challenges faced by Canadian physicians and medical learners[1] with the objective of informing decision-making around physician health initiatives. The overarching goal of the 2021 NPHS is to generate an up-to-date and relevant dataset for a range of audiences, including organizations, researchers, educators and stakeholders, to inform and advance physician wellness initiatives, as well as support other strategic priorities for the CMA Enterprise. In the 2021 NPHS, new concepts are introduced that allow for an in-depth comprehension of the workplace factors that contribute to medical professionals' wellness, updating the knowledge gained in the 2017 NPHS.[2]

The specific objectives of the 2021 NPHS are to measure physicians' and medical residents' wellness indicators and to understand the factors that affect these indicators. Using an equity lens, the study also intends to examine whether specific demographic subgroups have been disproportionately affected by the COVID-19 pandemic. This study will help inform recommendations for systemic change to improve health outcomes both for medical doctors in urban/suburban areas and for those who serve small town/rural/ remote (geographically isolated) areas.

This document presents the results of the 2021 NPHS for practising physicians and medical residents on the basis of the geographic location of their primary practice/residency area: urban/suburban vs. small town/rural/remote.

For the national results, full details on the methodology, study limitations, the questionnaire and other considerations, see the CMA 2021 National Physician Health Survey.

[1] Practising physicians, medical residents and students were invited to complete the survey. This report includes responses from practising physicians and medical residents only. This decision was made to facilitate tracking of results to the 2017 NPHS study in the foundational report: CMA 2021 National Physician Health Survey.

[2] Canadian Medical Association. (2018). *CMA National Physician Health Survey: A National Health Snapshot*. CMA. https://www.cma.ca/sites/default/files/2018-11/nph-survey-e.pdf

Executive summary

The COVID-19 pandemic has caused significant social and economic hardships for many Canadian physicians and medical residents. The *National Physician Health Survey Comparison of Geographic Locations: Urban/Suburban vs. Small Town/Rural/Remote Areas* report presents analyses examining whether any differences exist in the mental health and well-being of physicians and residents on the basis of the geographic areas in which they practise, and if so, in what ways.

The findings of the 2021 NPHS reveal that practising physicians and medical residents in small town/rural/remote settings experience more adverse psychological outcomes than those practising in urban/suburban settings. A respondent in the former group is more likely to be a practising physician who self-identifies as a woman, who is a general practitioner and has been in practice for 10 years or less. They are also more likely to be a caregiver of child(ren) and/or family or parent(s).

Anxiety is high among the group practising in smaller areas, and they report high levels of burnout. Depression is prevalent in over half of this group and four in 10 report having had thoughts of suicide at some point in their lives. All of these psychological variables are significantly higher among this group than among respondents practising in urban/suburban settings.

Concerningly, respondents in this group also score low on professional fulfilment and work significantly longer hours, on average. It is perhaps unsurprising they report a significantly higher likelihood to reduce their clinical hours in the next 24 months. With a lack of time and increased workloads, those practising in rural areas are burdened and feel less satisfied with their work–life integration.

The findings in this report also highlight a need for wellness supports, especially among those practising in small town/rural/remote areas. While this group reports fewer offerings of workplace wellness supports, they have a higher history of utilizing at least one support in the past five years, suggesting there is an unmet need.

A recent study highlights the effects of increased workload, infection risk, limited resources and strained personal relationships on the mental health of rural physicians. [3] Further efforts need to be made to protect physicians and medical residents serving in rural and isolated communities from the current strain of physician shortages and lack of resources, which have been exacerbated by the COVID-19 pandemic.

[3] Mandal, A., & Purkey, E. (2022). Psychological Impacts of the COVID-19 Pandemic on Rural Physicians in Ontario: A Qualitative Study. *Healthcare (Basel, Switzerland)*, *10*(3), 455. https://doi.org/10.3390/healthcare10030455

Methodology

Sampling approach

An open link survey, offered in both English and French, was promoted by the CMA via email to CMA members, social media, creative advertising and CMA communications channels including partner organizations. An open-link survey methodology was used to ensure that physicians and medical learners were invited beyond the CMA membership. The survey was open from Oct. 13 to Dec. 13, 2021. Participation in this study was voluntary.

A total of *n* = 3864 physicians and medical residents from across Canada's provinces and territories completed the 2021 NPHS.[4] This report presents the results of respondents based on the geographic location of their primary practice/residency area.

Table 1 below provides a breakdown of the geographic population subsample, comparing those who serve urban/suburban populations vs. those who serve small town/rural/geographically isolated, remote areas.

	Practising physicians/ medical residents Total base size	Practising physicians/ medical residents Total proportion	Urban/ suburban base size	Urban/ suburban proportion	Small town/ rural/ remote base size	Small town/ rural/ remote proportion
TOTAL sample	**3864**	**100%**	**2750**	**100% (71% of total)**	**848**	**100% (22% of total)**
PHYSICIAN STAGE						
Practising physician	3489	90%	2466	90%	800	**94%**
Resident	375	10%	284	10%	48	**6%**
Gender						
Men	1486	38%	1096	40%	294	**35%**
Women	2334	60%	1625	59%	543	**64%**
Neither applies[5]	12	0%	8	0%	3	0%
Prefer not to answer	32	1%	21	1%	8	1%

[4] Note that *n* = 257 medical students also completed the survey but were excluded from this analysis.

[5] Note that the proportion of those who selected "Neither applies to me" was too small to include in the subgroup analysis. Several respondents who selected "neither applies to me" identified as "non-binary;" there were also single mentions of "gender neutral," "gender fluid" and "Trans FTM – Male."

	Practising physicians/ medical residents Total base size	Practising physicians/ medical residents Total proportion	Urban/ suburban base size	Urban/ suburban proportion	Small town/ rural/ remote base size	Small town/ rural/ remote proportion
AGE						
<35	662	17%	443	16%	147	17%
35–54	1822	47%	1261	46%	449	**53%**
55–75	1361	35%	1031	38%	249	**29%**
PHYSICIAN TYPE						
General practitioner	1564	41%	975	36%	529	**63%**
Medical specialist	1410	37%	1120	41%	181	**21%**
Surgical specialist	369	10%	272	10%	69	8%
Other/Admin[6]	500	13%	372	14%	65	**8%**
Years in practice						
10 or less	950	27%	608	25%	271	**34%**
11 to 20 years	826	24%	573	23%	202	25%
21 years or more	1708	49%	1283	52%	324	**41%**
DISABILITY						
Self-identify as having disability	860	23%	629	23%	185	22%
Do not self-identify as having a disability	2945	77%	2078	77%	653	78%
CAREGIVER STATUS						
Caregiver of parent(s) or child(ren)	1829	47%	1266	46%	433	**51%**
Not a caregiver	2035	53%	1484	54%	415	**49%**
Caregiver of child(ren)	1551	40%	1051	38%	387	**46%**
Caregiver of parent(s)	393	10%	297	11%	72	8%
Caregiver of both parent(s) and child(ren)	115	3%	82	3%	26	3%

[6] "Admin" is defined as "administrative position"; "other" includes a range of responses including addictions, critical care, infectious diseases, palliative care and long-term care, among others.

	Practising physicians/ medical residents Total base size	Practising physicians/ medical residents Total proportion	Urban/ suburban base size	Urban/ suburban proportion	Small town/ rural/ remote base size	Small town/ rural/ remote proportion
ETHNIC AND RACIAL IDENTITY[7]						
Self-identify as "white" only	2,892	76%	2012	73%	696	**82%**
Do not self-identify as "white" only	613	16%	516	19%	86	**10%**
Other mentions	176	5%	133	5%	32	4%
Indigenous only	66	2%	38	1%	21	**2%**
REGION						
British Columbia	745	19%	541	20%	173	20%
West (AB, SK, MB)	963	25%	722	26%	166	**20%**
Ontario	1004	26%	761	28%	189	**22%**
Quebec	586	15%	410	15%	113	13%
Atlantic (NS, NB, PEI, NL)	525	14%	308	11%	176	**21%**
North (NWT, YT, NU)	30	1%	1	0%	8	1%

Table 1. Respondent sample proportions – urban/suburban vs. small town/rural/remote.

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

In reporting, sample sizes may be further reduced because of survey skip logic, exclusion of "prefer not to answer" responses, respondents not giving consent to collect data on sensitive question topics and respondents not completing the optional section of questions asked near the end of the survey.

Data were not weighted. For more information about considerations around weighting, see Appendix A in the CMA 2021 National Physician Health Survey.

[7] Results by ethnic/racial group were analyzed but there were very few differences at the aggregate level, that is, identifying as white vs. others). Where differences did exist by ethnic/racial group, it was often due to intersectional characteristics, e.g., Black physicians in the sample were more likely to be medical specialists and have a greater number of years in practice.

Survey instrument

Respondents completed an online survey with questions pertaining to several behavioural, social support, occupational and psychological variables relating to well-being.

The NPHS is made up of various scales and questions used to assess psychological factors (mental health and well-being, burnout, anxiety, etc.), as well as behavioural and occupational factors related to physician wellness. These were carefully selected on the basis of several criteria, including psychometric properties.

For detailed information on the methodology and to access the survey instrument for the NPHS, refer to the CMA 2021 National Physician Health Survey.

Notes to reader

Unless otherwise indicated, all questions reported exclude "don't know" and/or "not applicable" responses and thus base sizes may vary from question to question. Some results do not add to 100% because of rounding or because the question would have allowed the selection of multiple responses.

Results from the 2021 NPHS sample of practising physicians and medical residents serving urban or suburban regions are indicated on the charts by the label "urban/suburban," while the results from those serving small town, rural or geographically isolated, remote areas are labelled "small town/rural/remote" or "smaller areas." The data between geographic regions were compared, where applicable, using a *t*-test for statistical significance (95% confidence interval). A minimum sample size of $n = 30$ is used.

The term "significant" is stated when reporting on statistical differences between the "urban/suburban" and "small town/rural/remote" samples. Notations that are specific to this report: **green** text means significantly higher than the "urban/suburban" score; **red** text means significantly lower. For some cases where there are notable differences that are **not** statistically significant, the terms "more likely" or "less likely" are used.

Survey Results

Section 1. Sample demographics

Physicians and residents in small town/rural/remote settings are significantly more likely to be women, to be general practitioners and to have been practising for 10 years or fewer compared with those in urban/suburban areas.

Physicians and residents from small town/rural/remote settings are significantly more likely to be women (64% vs. 59% urban/suburban), to be between the ages of 35 and 54 years (53% vs. 46% urban/suburban), to be general practitioners (63% vs. 36% urban/suburban) and to have been in practice for 10 years or fewer (34% vs. 25% urban/suburban). Those in smaller areas are also significantly more likely to be caregivers of either parent(s) and/or child(ren) (51% vs. 46% urban/suburban). They are significantly more likely to self-identify as white (82% vs. 73% urban/suburban) and there are higher proportions working in the Atlantic region (21% vs. 11% urban/suburban).

Physicians and residents in small town/rural/remote areas are significantly less likely to be between the ages of 55 and 75 years (29% vs. 38% urban/suburban), to be medical specialists (21% vs. 41% urban/suburban) and to have over 21 years in practice (40% vs. 52% urban/suburban).

More details on the sample counts and proportions by subgroup can be found in Table 1 above.

Section 2. Psychological factors

Physicians and residents from small town/rural/remote areas are significantly more likely to have " severe" anxiety, suffer from burnout, screen positive for depression and have a history of suicidal ideation in their lifetime.

Table 2 provides a portrait of physicians' and residents' mental health and well-being.

Mental health and well-being are measured using the Mental Health Continuum Short Form (MHC-SF).[8] This scale measures mental health on a continuum from positive feelings and high psychosocial functioning (i.e., flourishing mental health) to lower levels of positive feelings and impaired psychosocial functioning (i.e., languishing mental health).[9] Results for the total sample demonstrate that roughly one in 10 physicians and residents are classified as languishing in their mental health. The rate of those classified as languishing is similar among urban/suburban (7%) and small town/rural/remote (9%) respondents. Similar rates are also found when comparing emotional, social and psychological well-being.

Using the General Anxiety Disorder 7-Item Scale screening tool,[10] the study finds that one-quarter of all respondents indicate experiencing "severe" or "moderate" anxiety. Respondents from small town/rural/

[8] Mental Health Continuum Short Form (MHC-SF) Index. Responses to 14 questions assessing emotional well-being and aspects of psychological and social functioning are scored and scaled to categorize respondents into one of three categories (languishing, moderate or flourishing).

[9] Keyes C. L. (2002). The mental health continuum: from languishing to flourishing in life. *Journal of health and social behavior*, *43*(2), 207–222.

[10] Anxiety (General Anxiety Disorder) 7-Item Scale. This is calculated by assigning scores of 0, 1, 2 and 3 to the response categories, respectively, of "not at all," "several days," "more than half the days" and "nearly every day." Scoring is 0–4: minimal anxiety; 5–9: mild anxiety; 10–14: moderate anxiety; 15–21: severe anxiety.

remote areas are significantly more likely to be experiencing “severe” anxiety (12% small town/rural/remote vs. 9% urban/suburban).

Burnout was measured using the Maslach Burnout Inventory (MBI) two-item scale.[11] Over half of respondents from small town/rural/remote areas (58% vs. 51% urban/suburban) report symptoms of burnout, that is, they score high on at least one burnout indicator of depersonalization (32% vs. 27% urban/suburban) or emotional exhaustion (54% vs. 48% urban/suburban). These findings on both indicators and overall burnout are statistically higher among physicians in small town/rural/remote areas than among physicians in larger centres.

The PHQ-2 depression screening tool was used to measure depression in the survey.[12] Fifty-four percent of respondents from small town/rural/remote areas screened positive for depression compared with 46% of those in urban/suburban areas. This finding is statistically significant, with those practising in rural communities experiencing higher rates of depression.

Over four in 10 respondents (43%) from small town/rural/remote areas have had thoughts of suicide at some point in their life, which is significantly different than the 34% of urban/suburban practitioners. They are also more likely to report recent suicidal ideation in the past 12 months (17% vs. 13%, although not statistically significant).

Psychological variables (%)	Urban/suburban	Small town/rural/remote
OVERALL MENTAL HEALTH		
Flourishing	47%	44%
Moderately mentally healthy	46%	47%
Languishing	7%	9%
n	2287	720
ANXIETY		
Minimal anxiety	42%	41%
Mild anxiety	34%	33%
Moderate anxiety	15%	14%
Severe anxiety	9%	**12%**
n	2750	848
EMOTIONAL WELL-BEING		
High	80%	78%
Low	20%	22%
n	2287	720

[11] Maslach Burnout Inventory Two-Item Scale. Scoring on MBI two-item scale: To be classified as burned out, an individual must experience high levels of emotional exhaustion (item 1 – “I feel burned out from my work or training environment”) and/or depersonalization (item 2 – “I have become more callous towards people since I took this job or started this training”). Rating high on these two items in question 41 is defined as occurring at least weekly (i.e., a respondent must select "everyday,” “a few times a week” or “once a week” on at least one of the two items to be classified as burned out).

[12] PHQ-2 Depression Scale. If respondents answered “yes” to either item 1. “Felt down, depressed, or hopeless for two or more weeks in a row” or 2. “Lost interest or pleasure in most things like hobbies, and/or work activities that usually give you pleasure”), they classify as “positive” for depression. If both items are “no,” then they are classified as “negative” for depression.

Psychological variables (%)	Urban/suburban	Small town/rural/remote
SOCIAL WELL-BEING		
High	54%	50%
Low	46%	50%
n	2287	720
PSYCHOLOGICAL WELL-BEING		
High	78%	76%
Low	22%	24%
n	2287	720
BURNOUT		
High emotional exhaustion	48%	**54%**
High depersonalization	27%	**32%**
High in at least one indicator	51%	**58%**
n	2750	848
DEPRESSION		
Screened positive	46%	**54%**
n	2750	848
SUICIDAL IDEATION		
Lifetime	34%	**43%**
Recent (Last 12 months)	13%	17%
n	2668	824

Table 2. The prevalence of psychological factors. Mental health – Mental Health Continuum Short Form (MHC-SF) Index created from responses to question 64; Anxiety (General Anxiety Disorder 7-Item Scale: GAD-7); MHC-SF Index Q64. For well-being, each response is scored 00 = "'Never," 1.00 = "Once or twice," 2.00 = "About once a week," 3.00 = "About 2 or 3 times a week," 4.00 = "Almost every day," 5.00 = "Every day." Sum scores for each respondent are classified above or below midpoint. Emotional well-being: 0–7 is low; 8–15 is high. Social well-being: 0–12 is low; 13–25 is high. Psychological well-being: 0–15 is low; 16–30 is high; Burnout – Maslach Burnout Inventory 2-item Scale. Scoring: To be classified as "burned out," an individual must experience a high level of emotional exhaustion (item 1) and/or depersonalization (item 2). A high level on each of these items is defined as occurring at least weekly ("every day," "a few times a week" or "once a week"); Depression screening – PHQ-2 Depression Scale; Responses to question 47. Have you had thoughts of suicide? Responses to question 48. Have you had thoughts of suicide in the last 12 months?

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Section 3. Impact of COVID-19 on mental health

COVID-19 has had a negative impact on physicians, with six in 10 respondents rating their mental health as worse since the pandemic started, regardless of the location of practice.

For physicians and medical residents practising in all types of geographic population areas (i.e., total sample), six in 10 report that their mental health was worse during the COVID-19 pandemic (slightly/much worse: 39%/21% urban/suburban vs. 41%/21% small town/rural/remote). There were no significant differences between the urban/suburban and small town/rural/remote groups.

Moral distress[13] is also pronounced among both populations, with over half of respondents reporting that they have felt morally distressed since the start of the pandemic (always/very often/sometimes: 52% among urban/suburban physicians/residents vs. a slightly higher proportion of 56% among small town/rural/remote physicians/residents).

In comparison with urban/suburban respondents, physicians and residents working in small town/rural/remote areas are significantly more likely to indicate that they plan to reduce their clinical hours.

Nearly half of practising physicians and medical residents from smaller areas say they are likely (52%) to reduce their clinical hours in the next two years, significantly higher than those from urban/suburban areas (48%).

Impact of COVID-19	Urban/suburban	Small town/rural/remote
MENTAL HEALTH RATING COMPARED WITH BEFORE THE PANDEMIC		
Much better	2%	2%
Somewhat better	6%	7%
About the same	32%	30%
Slightly worse	39%	41%
Much worse	21%	21%
n	2750	848
FEELING MORALLY DISTRESSED SINCE THE ONSET OF THE COVID-19 PANDEMIC		
Always	3%	3%
Very often	17%	19%
Sometimes	32%	35%
Rarely	29%	27%
Never	19%	16%
n	2750	848

[13] Moral distress is defined in the survey as psychological distress that results from events that go against one's values and moral beliefs. It occurs when one feels unable to take what one believes to be an ethically appropriate or right course of action because of institutionalized obstacles.

Impact of COVID-19	Urban/suburban	Small town/rural/remote
LIKELIHOOD TO REDUCE CLINICAL HOURS		
Very likely / likely	48%	**52%**
Not sure	16%	18%
Unlikely / very unlikely	36%	**30%**
n	2750	848

Table 3. Impact of COVID-19 on mental health and clinic hours. Rating of mental health compared with before the pandemic: responses to question 54. Compared with before the COVID-19 pandemic, how would you rate your mental health now? Q56. Since the onset of the COVID-19 pandemic, how often have you felt morally distressed? Moral distress is defined as psychological distress that results from events that go against one's values and moral beliefs. It occurs when one feels unable to take what one believes to be an ethically appropriate or right course of action because of institutionalized obstacles. Q57. How likely is it that you will reduce or modify your clinical work hours in the next 24 months?

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Increased workload, rapidly changing policies/processes and longer time with social restrictions/social isolation were the three biggest factors contributing to the negative mental health of small town/rural/remote physicians and medical residents.

When asked about the factors that have contributed negatively to mental health during the pandemic, practising physicians and medical residents from smaller areas were significantly more likely than urban/suburban respondents to select many workplace factors. These include increased workload, lack of human resources, long waitlists and concerns about long-term care. These respondents were significantly less likely to report reasons such as continued uncertainty about the future, adjustment to virtual learning, challenges in acquiring personal protective equipment, physical health struggles and decreased workload. Details of these findings can be found in Table 4.

Factors that contributed negatively to mental health during the pandemic	Urban /suburban	Small town /rural/remote
Increased workload and/or lack of work–life integration	56%	**61%**
Rapidly changing policies/processes	54%	58%
Longer time with social restrictions/social isolation	55%	55%
Continued uncertainty about the future	53%	**49%**
Lack of human resources	33%	**44%**
Long waitlists	33%	**37%**
Family issues and obligations	35%	35%
Adjustment to virtual care	28%	28%
Concerns about vaccine rollout	23%	23%
Financial insecurity	17%	17%
Adjustment to virtual learning	18%	**15%**
Lack of peer support	14%	14%
Challenges acquiring personal protective equipment (PPE)	17%	**14%**

Factors that contributed negatively to mental health during the pandemic	Urban /suburban	Small town /rural/remote
Interpersonal conflict	12%	13%
Concerns about long-term care	9%	**13%**
Physical health struggles	15%	**12%**
College complaint or lawsuit	7%	8%
Decreased workload	4%	**3%**
Other	18%	19%

Table 4. Factors that contributed negatively to mental health during the pandemic: responses to question 55. What do you believe has contributed negatively to your mental health during the pandemic? Select all that apply. Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Section 4. Work-related factors impacting mental health

Over eight in 10 respondents from small town/rural/remote regions score low on professional fulfillment.

Professional fulfillment is measured by the Professional Fulfillment Index, which includes question items on the meaningfulness of work and contributing professionally in ways that are valued most, among others.[14] Less than two in 10 of respondents from small town/rural/remote regions (16%) score high on the Professional Fulfillment Index, significantly lower than the 22% of their urban/suburban counterparts. Conversely, 84% score low on professional fulfillment compared with 78% of respondents practising in urban/suburban areas.

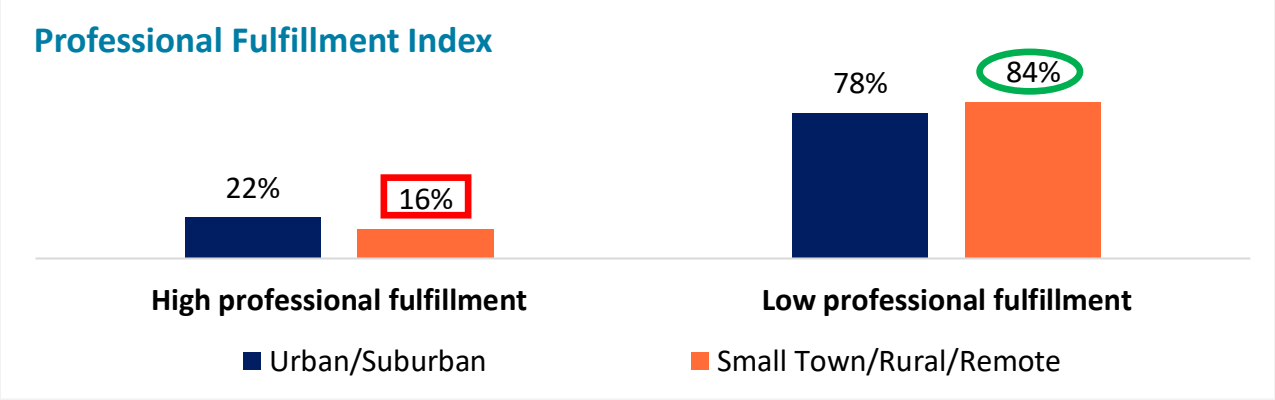

Figure 1. PROFESSIONAL FULFILLMENT INDEX. Dichotomous professional fulfillment subscale (6-items average) is recommended at an average item score cut-off point of >3.0. Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848). +Excludes those who did not agree to continue with the optional questions.

** Significance testing: a **green** oval shape means significantly higher than physicians and medical residents; a **red** rectangle means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

[14] The Professional Fulfillment Index (PFI) is measured using the dichotomous scale on the Professional Fulfillment subscale (6-item average). Items are scored 0 to 4 and treated as a continuous variable. Scale score is calculated by averaging the item scores. Scale score is multiplied by 25 to create a scale range from 0 to 100. Dichotomous professional fulfillment is calculated at an average item score cut-point of >3.0.

Over five in 10 respondents score high on feeling a sense of psychological safety on their team.

Psychological safety was assessed using Amy Edmondson's Psychological Safety and Learning Behavior in Work Teams measure.[15] Four in 10 respondents from small town/rural/remote areas score moderate on psychological safety (42%), 55% score high and 3% score low. In comparison, respondents from urban/suburban areas are more likely to score high on psychological safety (58%); 39% score moderate and 3% score low.

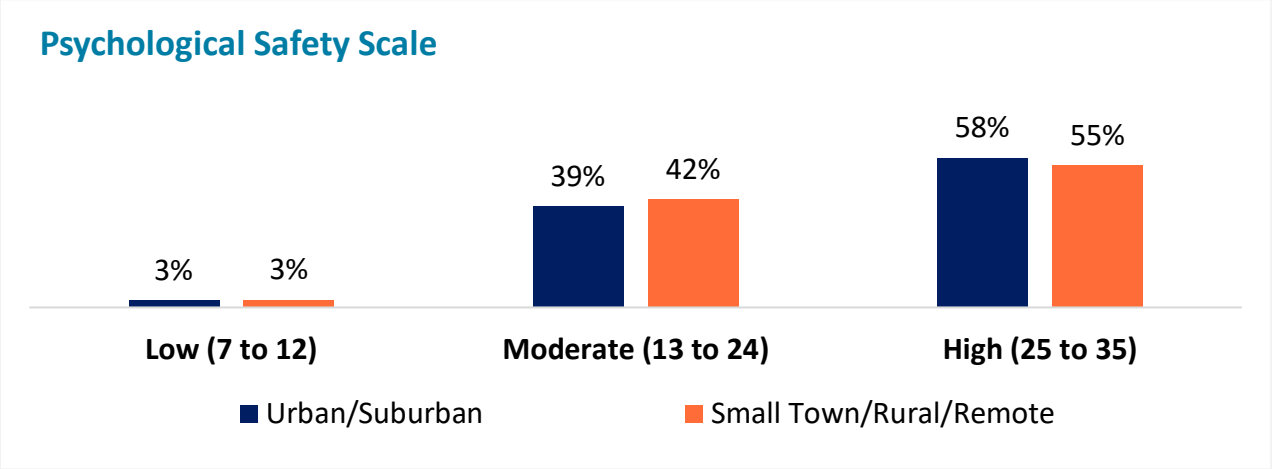

Figure 2. Psychological safety. Calculated total continuous score in tertiles. Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848)

Occupational factors, including lower levels of control over workload, and a greater number of hours worked on average may contribute to negative outcomes.

Respondents in small town/rural/remote areas are significantly less likely to be very satisfied with their work–life integration (6% vs. 8% urban/suburban). They are significantly more likely to report a busy but reasonable work atmosphere (54% vs. 46% urban/suburban) and less likely to report a "1" or a "2" on a scale of 1 – chaotic to 5 –calm. Respondents in small town/rural/remote areas report significantly longer average work hours, especially on patient care (40.7 vs. 35.9 urban/suburban) and administrative tasks (10.5 vs. 9.6 urban/suburban).

Educational/occupational variables (%)	Urban/suburban	Small town/rural/remote
CONTROL OVER WORKLOAD		
Optimal	5%	4%
Good	21%	20%
Satisfactory	28%	29%
Marginal	31%	32%
Poor	15%	15%
n	2738	845

[15] Psychological Safety and Learning Behavior in Work Teams: seven items scored 1 to 7 with a range from 7 to 35. Scores are calculated into tertiles: 7 to 12, 13 to 24 and 24 to 35.

Educational/occupational variables (%)	Urban/suburban	Small town/rural/remote
WORK–LIFE INTEGRATION		
Very satisfied	8%	**6%**
Satisfied	41%	42%
Dissatisfied	41%	41%
Very dissatisfied	10%	11%
n	2736	846
ATMOSPHERE IN PRIMARY WORK AREA		
5 – Calm	4%	4%
4	9%	9%
3 – Busy, but reasonable	46%	**54%**
2	29%	**25%**
1 – Chaotic	12%	**8%**
n	2750	848
EXPERIENCED INTIMIDATION, BULLYING, HARASSMENT AND/OR MICROAGGRESSIONS IN THE WORKPLACE		
Frequently	11%	11%
Often	17%	19%
Less often	49%	51%
Never	23%	**19%**
n	2750	848
AVERAGE WORK HOURS		
Patient care	35.9	**40.7**
Administrative tasks	9.6	**10.5**
Other	7.4	**4.8**
Total work hours	52.9	**56**
n	2750	848

Table 5. Educational and occupational factors. Control over workload: responses to question 45, part of Mini-Z survey. How would you rate the following? Q45aa. Please rate your degree of satisfaction with each of the following dimensions of your workplace: work–life integration (i.e., meeting personal and professional obligations, atmosphere in primary work area, responses to question 45b. Q45b. Which number best describes the atmosphere in your primary work area? Q25. Have you ever personally experienced intimidation, bullying, harassment and/or microaggressions in the workplace or in a training environment? Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Frequently = every day, a few times a week; Often = once a week, a few times a month; Less often = once a month or less, a few times a year; NA = not applicable. Ever= 100% minus "Never" Responses to question 20. Average hours worked

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

It is not surprising given the heavy workload and workplace environment that many physicians and residents working in small town/rural/remote areas experience fatigue at higher levels of frequency.

Practising physicians and medical residents from small town/rural/remote areas are more likely to report they often feel fatigued at work or school (46% vs. 39% urban/suburban). This finding is statistically significant. The frequency with which they never/rarely get optimal sleep is on par with that of suburban/urban physicians/residents (32% vs. 30%, respectively).

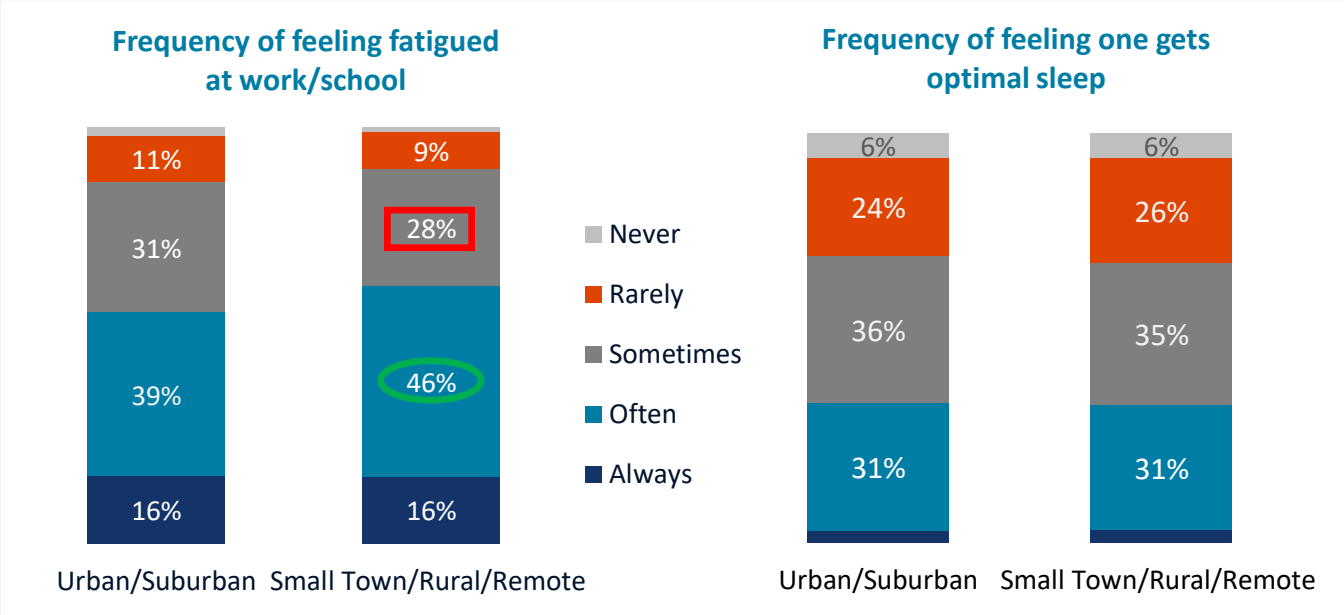

Figure 3. Frequency of feeling fatigued at work/school: responses to question 35. How often do you feel fatigued at work/school? Frequency of feeling one gets optimal sleep: responses to question 37. How often do you feel you are getting optimal sleep? Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848). Lack of time (84%)

** Significance testing: a **green** oval shape means significantly higher than physicians and medical residents; a **red** rectangle means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Practising physicians and medical residents in small town/rural/remote settings report lower job satisfaction and higher levels of stress.

Practising physicians and medical residents from small town/rural/remote settings are significantly less likely to strongly agree that they are satisfied with their job or training position (12% vs. 15% urban/suburban). They are more likely to agree that they feel a great deal of stress due to their position (strongly agree/agree: 18%/42% vs. 16%/40% urban/suburban). Both groups equally agree that the electronic medical record (EMR) add frustration to their day.

Educational/occupational variables (%)	Urban/suburban	Small town/rural/remote
SATISFACTION WITH JOB/TRAINING POSITION		
Strongly agree	15%	**12%**
Agree	45%	44%
Neither agree or disagree	18%	19%
Disagree	15%	17%
Strongly disagree	7%	7%
n	2747	846
I FEEL A GREAT DEAL OF STRESS DUE TO MY JOB/TRAINING POSITION		
Strongly agree	16%	18%
Agree	40%	42%
Neither agree or disagree	18%	19%
Disagree	18%	18%
Strongly disagree	8%	**4%**
n	2733	844
EMR ADDS TO THE FRUSTRATION OF MY DAY		
Strongly agree	28%	28%
Agree	29%	29%
Neither agree or disagree	17%	16%
Disagree	18%	**21%**
Strongly disagree	8%	6%
n	2509	782

Table 6. Job satisfaction and job-related stress: responses to question 43, part of the Mini-Z scale. To what extent do you agree or disagree with the following statements?

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Section 5. Behavioural factors and wellness supports

Seven in 10 respondents score "high" on perceived level of support.

The Multidimensional Scale of Perceived Social Support (MSPSS) was used to measure social support.[16] A majority of respondents score "high" on the MSPSS; there is no significant difference between subgroups (71% urban/suburban vs. 72% small town/rural/remote settings). Of significant note is that respondents from small town/rural/remote are less likely to have a primary care physician, with only 76% stating that they have one, compared with 81% in urban/suburban areas.

Behavioural factors and social support (%)	Urban/suburban	Small town/rural/remote
PERCEIVED SOCIAL SUPPORT (MSPSS)		
Low	3%	4%
Medium	26%	24%
High	71%	72%
n	2287	720
PRIMARY CARE PHYSICIAN		
Yes	81%	**76%**
n	2750	848

Table 7. Behavioural and social support factors among practising physicians and medical residents. Scoring for Multidimensional Scale of Perceived Social Support (MSPSS) by practising physician and resident groups: responses to question 30. Do you have a regular primary care physician (i.e., registered)?

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

A large majority of respondents do some kind of activity for self-care, with physical activity and socializing topping the list.

The majority of respondents working in small town/rural/remote areas participate in a form of physical health and fitness (86%), hobbies (89%) and social support (82%) as a means of self-care. Almost four in 10 respondents from small town/rural/remote areas participate in gardening (38% vs. 32% urban/suburban) and almost two in 10 practise gratitude (16% vs. 13% urban/suburban). These findings are statistically significant.

[16] The MSPSS measure accounts for social support received from family, a significant other and friends. To calculate total MSPSS score, scores across all 12 items in question 65 were summed together (those indicating "don't know" or refusing to answer for any of the 12 items were excluded). Those with an MSPSS score of 12–35 were classified as "low," 36–60 as "medium" and 61–84 as "high" perceived social support.

Self-care activities	Urban/suburban	Small town/rural/remote
PHYSICAL HEALTH & FITNESS (NET)	88%	**86%**
Physical activity	79%	77%
Healthy eating	56%	54%
Optimal sleep	37%	34%
Stretching	28%	25%
HOBBIES (NET)	87%	89%
Reading	61%	62%
Cooking or baking	41%	44%
Music	32%	**38%**
Gardening	40%	37%
Art, such as painting or crafting	14%	17%
Volunteering	12%	12%
Dance	5%	5%
SOCIAL (NET)	84%	82%
Spending time with family and/or friends	82%	80%
Peer support	22%	23%
SPIRITUAL AND MINDFUL PRACTICES (NET)	48%	51%
Mindfulness or meditation	24%	27%
Spiritual practices (prayer, worship, etc.)	17%	19%
Mindful breathing (e.g., box breathing)	17%	19%
Practicing gratitude (e.g., journaling)	13%	**16%**
Building resilience	10%	10%
Self-compassion exercises	11%	10%
Other	11%	13%
None of the above	1%	1%

Table 8. Self-care activities to support well-being: responses to question 38. What self-care activities do you do to support your well-being in your personal life, outside of work (excluding household duties/chores/ responsibilities)? Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Only one in 10 respondents say they do *not* face any barriers to maintaining a healthy lifestyle.

While a majority of respondents take part in some form of self-care activity for wellness, many also note several barriers that can hinder the maintenance of a consistent healthy lifestyle, especially among those in small town/rural/remote areas. Scheduling (61%), shiftwork (27%) and no post-call day (25%) are barriers reported significantly more frequently by respondents in this group than by those from urban/suburban areas.

Barriers to maintaining a healthy lifestyle	Urban/suburban	Small town/rural/remote
Lack of time	64%	66%
Heavy workload and/or stressful work environment	59%	62%
Scheduling (e.g., long work hours)	54%	**61%**
Other priorities (e.g., children)	37%	40%
Shiftwork (e.g., inadequate recovery periods between shifts)	17%	**27%**
Psychological distress	24%	26%
No post-call day	15%	**25%**
My workplace or training environment doesn't support these behaviours (e.g., minimal healthy food choices, lack of access to physical activity facilities)	18%	18%
Maintaining a healthy lifestyle is not a priority for me	1%	2%
Other	9%	9%
No barriers, I am able to maintain a healthy lifestyle	11%	10%

Table 9. Barriers preventing a healthy lifestyle: responses to question 39. Which, if any, of the following barriers prevent you from maintaining a healthy lifestyle (e.g., being physically active, eating healthily, getting adequate sleep)? Check all that apply. Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Practising physicians and medical residents from small town/rural/remote settings are significantly *less likely* to report having wellness supports in the workplaces.

Practising physicians and medical residents from small town/rural/remote areas are significantly less likely to report that their workplace offers any wellness supports (50% vs. 57% urban/suburban). They are significantly less likely to say they have access to psychological supports and/or peer supports (25% vs. 35% urban/suburban), back-up call (18% vs. 22%), access to exercise facilities and/or activities (6% vs. 12%), nutritious food options (5% vs. 9%) and other wellness-related activities and/or incentives (4% vs. 7%). They are, however, more likely to say they have access to a primary care physician in their workplace (16% vs. 7%).

Workplace wellness supports	Urban/suburban	Small town/rural/remote
Access to psychological supports and/or peer supports	35%	**25%**
Back-up call, when I need time off for urgent life matters	22%	**18%**
Access to a primary care physician	7%	**16%**

Workplace wellness supports	Urban/suburban	Small town/rural/remote
Access to exercise facilities and/or activities	12%	6%
Nutritious food options	9%	5%
Other wellness-related activities and/or incentives	7%	4%
Daycare services	2%	1%
Workplace offers wellness supports	**57%**	**50%**
None of the above	43%	50%

Table 10. Wellness support offerings at current workplace: responses to question 40. Which of the following does your current workplace offer to support your wellness (if any)? Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

While they have less access to wellness supports in the workplace, physicians and residents from small town/ rural/remote areas are significantly more likely to report having accessed wellness supports in the past five years (58% accessed vs. 53% of urban/suburban). Primary care physicians (34%) and Other mental health professionals (psychiatrist, psychologist, licensed counsellor, etc.) (28%) are the most frequently accessed. They are significantly more likely than urban/suburban physicians/residents to have accessed the provincial Physician Health Program (PHP) (19% vs. 14% Urban/Suburban) and mentorship or coaching services (14% vs. 11% Urban/Suburban) supports.

Workplace supports accessed in past five years	Urban/ suburban	Small town/ rural/remote
Primary care physician	32%	34%
Other mental health professional (psychiatrist, psychologist, licensed counsellor, etc.)	26%	28%
Provincial Physician Health Program (PHP)	14%	19%
Mentorship or coaching	11%	14%
Employee Assistance Program (EAP)	3%	4%
Other	4%	4%
Local peer support program (i.e., not the Wellness Connection)	4%	3%
CMA Wellness Support Line	1%	1%
CMA Wellness Connection	1%	1%
Used at least one support in past five years	**53%**	**58%**
None of the above	47%	42%

Table 11. Wellness supports accessed in past five years: responses to question 58. In the last five years, have you accessed any of the following wellness supports (including mental health and crisis supports)? Select all that apply. Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

When respondents were asked what may prevent them from seeking wellness supports, believing the situation is not severe enough, having no time, and being ashamed to seek help were identified as the main reasons.

Respondents from small town/rural/remote areas are significantly more likely to cite confidentiality as a reason for not seeking wellness supports (34% vs. 28% urban/suburban).

Reasons for not seeking wellness supports	Urban/ suburban	Small town/ rural/remote
Believing the situation is not severe enough	54%	54%
No time	55%	54%
Ashamed to seek help	46%	47%
Other professional consequences (e.g., fewer career advancements opportunities, denied insurance, etc.)	22%	19%
Risk of losing medical licence and ability to practise	21%	21%
Confidentiality	28%	**34%**
Not aware of the services available	20%	17%
Concerns about quality of care	6%	6%
Service not required	9%	7%
Professional supports already in place	2%	1%
Other	7%	7%

Table 12. Possible reasons for not seeking wellness supports: responses to question 60. What do you think are the main reasons some physicians may have for NOT seeking wellness supports? Base: urban/suburban (*n* = 2750), small town/rural/remote (*n* = 848).

** Significance testing: a **green** font means significantly higher than physicians and medical residents; a **red** font means significantly lower than the compared group. T-test for statistical significance used (95% confidence interval).

Discussion

The *Comparison of Geographic Locations: Urban/Suburban vs. Small Town/Rural/Remote Areas* report compares the results on several key measures between physicians and medical residents practising in small town, rural, remote or isolated areas and those practising in urban and suburban communities. Research has shown that the COVID-19 pandemic has disproportionately impacted rural physicians, with these individuals considered more vulnerable because of their high pre-pandemic burnout rates compared with their colleagues serving urban communities.[17] Further, the pandemic has driven many patients living in isolated communities in search of access to care, with telemedicine and demands for virtual care on the rise.[18] However, there is a dearth of research on the impact of these changes on physicians and medical residents practising in these rural communities. This report presents analyses of physicians' and medical residents' wellness indicators to inform our understanding of the factors that may affect these indicators among physicians and residents practising across geographic population areas.

In Canada, geographic location is a determinant of health, with self-reported health declining in rural/remote areas and higher reported rates of major depressive disorder in these regions.[19] In a study in Ontario, rural physicians reported an increase in self-reported depression, anxiety and stress levels.[20] The findings in this report add to the limited literature, with results showing higher levels of anxiety, burnout, screening for depression and suicidal ideation among physicians and medical residents practising in small town/rural/remote regions compared with their peers in urban/suburban locations.

The findings show that a majority of physicians and medical residents practising in small town/rural/remote regions are women, between the ages of 35 to 54 years and generally earlier on in their career (10 or fewer years of practice). Furthermore, over half have family responsibilities, with 46% reporting that they are caregivers of child(ren) and 8% caregivers of parent(s). Personal time and work–life integration will have a larger impact on this group as caregivers. Moreover, they average longer work hours in completing patient care and administrative tasks than their urban/suburban counterparts. Indeed, respondents cite increased workload as the largest factor that has contributed negatively to their mental health during the pandemic.

Professional fulfilment is reported to be lower among this group and almost half believe their control over their workload is only marginal or poor.

It is not unexpected that this group, with greater family and work-related responsibilities, reports a higher likelihood of reducing their clinical hours. These individuals are more likely to report that they often feel fatigued at work and/or school and report a lack of time and heavy workload as the main barriers to maintaining a healthy lifestyle. In addition, a significant number of respondents report that they do not have a primary care physician, with only 76% having access in small town/rural/remote areas as compared with 81% with access in urban/suburban settings.

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[17] Mandal, A., & Purkey, E. (2022). Psychological Impacts of the COVID-19 Pandemic on Rural Physicians in Ontario: A Qualitative Study. Healthcare (Basel, Switzerland), 10(3), 455. https://doi.org/10.3390/healthcare10030455

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It is important to acknowledge that all physicians and medical residents have faced challenges with their mental health and well-being during the COVID-19 pandemic, regardless of their geographic location. Nonetheless, this report highlights the subtly different experiences of health practitioners in smaller population regions in Canada that put them at greater risk of experiencing poor mental well-being outcomes.

Conclusion

Results from this study highlight the extent to which geographic regions and their related factors have had an impact on physicians and medical students during the COVID-19 pandemic. The findings indicate that additional supports and adaptations are needed in rural and more isolated regions. Programs, policies, interventions and other measures should target the workplace and organizational factors highlighted throughout this report to improve physicians' professional fulfillment and job satisfaction and to help reduce levels of burnout and fatigue. However, efforts should also be focused on larger health system-level changes that can address the shortages in health human resources to relieve the heavy workloads of physicians and residents practising in small towns, rural, remote and isolated areas.

Limitations and future research

As with any research, the execution of this study involved methodological decisions that have an impact on the representativeness of the findings. For more information on the main limitations of the study, see the CMA 2021 National Physician Health Survey.

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