

Burning the Candle at Both Ends: Combatting Occupational Burnout in Canada's Health Care System

**by
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Abstract

Canada is facing a growing and substantial shortage of healthcare workers. One of the main factors contributing to this shortage is the prevalence of occupational burnout amongst health care workers, causing many to depart their positions within the field. This burnout is affecting not only the mental and physical health of workers, but also quality of care and patient outcomes, leading to additional costs for the healthcare system. Addressing burnout is crucial to tackling the worker shortage, but there is a lack of coordinated policy action in Canada. This study analyzes national survey data to examine potential predictors of occupational burnout amongst health care workers as well as variables that can reduce one's likelihood of experiencing the phenomenon. The findings from the analysis are used to develop a series of policy recommendations aimed at reducing burnout among health care workers.

Keywords: Occupational burnout; health care; labour shortage; virtual care; mental health; public policy

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List of Acronyms

CHW Community Health Worker

EHR Electronic Health Record

GROSS Getting Rid of Stupid Stuff

HCW Health Care Worker

SHCWEP Survey on Health Care Worker's Experiences During the Pandemic

Chapter 1.

Introduction

Canada—along with various other nations—is in the midst of a growing health care worker (HCW) shortage. This is an issue that has existed for many years with the recent emergence of the COVID-19 pandemic exacerbating it significantly. Between September and December 2021, the number of job vacancies amongst HCWs increased by roughly 92 percent when compared to pre-pandemic 2019 levels (Statistics Canada, 2022a). Additionally, registered nurses were found to be the occupation with the largest year-over-year increases in job vacancies in Canada within the first quarter of 2021 (Statistics Canada, 2021).

Because of this, it is becoming increasingly difficult for Canadians to access appropriate healthcare to suit their needs. In 2019, 14.5 percent of Canadians over the age of 12 indicated that they did not have a regular health care provider, with additional surveys indicating an increase to roughly 18 percent in 2021 (Statistics Canada, 2020; College of Family Physicians of Canada, 2021). Furthermore, 50 percent of Canadians report being either unable to see the doctor they have within a week or trying but unable to find a doctor at all (Angus Reid Institute, 2022). Access to medical care is further impacted by factors such as variations in worker specialty and rural-urban disparities which can make it notably more difficult for individuals to receive the care they need (Angus Reid Institute, 2022). This issue appears to be multi-faceted as there seems to be a decreasing number of individuals entering the medical care field as well as an increase in current workers departing the field. Additionally, with factors such as the aging baby boomer population increasing the burden on the health care system as time goes on, Canada is expected to be part of a global trend that projects broad health care labor shortages will continue (Haddad et al, 2022). This shortage has dire implications regarding the health and well-being of Canadians as such labor shortages have been shown to correlate with deficiencies in quality of care as well as higher morbidity and mortality rates in a given jurisdiction (Haddad et al, 2022.).

While there are a number of contributing factors that have driven this crisis, one that has emerged as being of particular concern is occupational burnout. Occupational

burnout is a psychological syndrome that refers to a state of physical and emotional exhaustion resulting from chronic exposure to and mismanagement of work-related stress. As of 2022, roughly 63 percent of health care workers have cited burnout as the main reason for leaving their jobs in the next three years (Statistics Canada, 2022a), making it the primary reason for job departure in the field.

Burnout has been linked to a number of poor health outcomes for HCWs contributing to depression, anxiety, substance abuse and suicide (De Hert, 2020; Canadian Medical Association, 2022). These negative outcomes also extend to patient populations as worker departure and feelings of depersonalization have been found to relate to lower standards of care and heightened clinical errors (Lyndon, 2015). Such factors can compound into additional costs to Canada's health care system with the total estimated cost of burnout amongst practicing physicians being roughly 213.1 million dollars in 2014 (Dewa, 2014). Such costs have been estimated to increase to roughly 4.6 billion dollars in jurisdictions such as the United States (Blanding, 2019).

This study explores both the extent and predictors of occupational burnout amongst Canadian health care workers using an analysis of the Statistics Canada "Survey on Health Care Workers' Experiences During the Pandemic". The findings of this research are used to devise five policy options aimed at combatting occupational burnout in the health care system. These options are evaluated using multi-criteria analysis in order to assess their respective benefits and disadvantages, before a final recommendation is made. This recommendation is made with the goal of reducing occupational burnout and consequently addressing a critical aspect of the health care worker shortage. Chapter 2 of this paper explores the current state of the Canadian health care labour shortage including general trends and practical implications for worker and patient care. Chapter 3 outlines the definition of "occupational burnout", its presence in the Canadian context as well as its impacts on patient and worker health and the medical system as a whole. Chapter 4 conducts a quantitative analysis to identify key predictors of burnout and critically analyzes findings in the context of broader literature. Chapter 5 uses the findings of this analysis to inform the design of 5 policy options intended to mitigate burnout amongst HCWs, as well as the criteria they are evaluated against. The full analysis of these policy options is conducted in Chapter 6, before a final recommendation is made in Chapter 7. Chapter 8 concludes with a final summary of the paper and suggestions for future research.

Chapter 2.

Canada's Health Care Labour Shortage

This chapter explores the current state of the health care labour shortage within Canada. Notable trends in labour market capacity are highlighted and specific focus is given to the nature of this threat to public health.

2.1. Health Care Shortages in Canada

The issue of Canada's health care shortage has been acknowledged in reports as far back as 2004, however, recent years and the emergence of the COVID-19 Pandemic have seen it exacerbated significantly (Government of Canada, 2004). In the third quarter of 2019, roughly 40,300 jobs in health care related occupations were unfilled across Canada (Hou and Schimmele, 2020). Between September and December of 2021, the number of job vacancies amongst health care practitioners increased by roughly 92 percent when compared to pre-pandemic 2019 levels (Statistics Canada, 2022a). Additionally, registered nurses were found to be the occupation with the largest year-over-year increases in job vacancies in Canada within the first quarter of 2021 (Statistics Canada, 2021). On the whole, the number of job vacancies in all health occupations grew more than the total economy in 2021 (Wynoch, 2022). Additionally, the proportion of vacancies for full-time jobs relative to part-time increased for nurses, technical health occupations, nursing aides, orderlies and personal support workers (Wynoch, 2022).

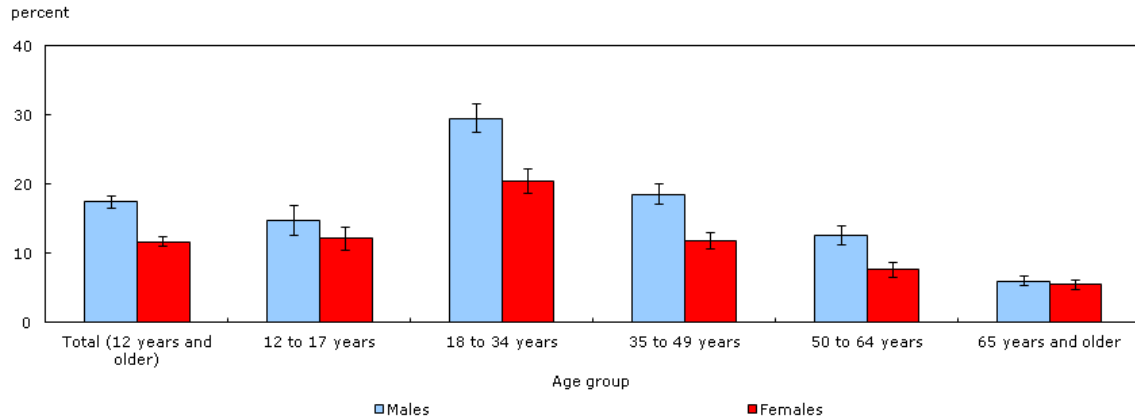
It is important to recognize that this shortage is both supply-driven and demand-driven policies such as the elimination of one-year rotating internships and remuneration and expenditure caps saw substantial reductions in students entering nursing or family practice and drove many to work in other countries such as the United States (College of Family Physicians Canada, 2017; Malko and Huckfeldt, 2017; Ariste, 2019). Similarly, policies such as restrictions on international medical graduates further reduced the inflow of new medical professionals in Canada (Chan, 2002). The impacts of these policies have had a disproportionate effect on particular medical professions, as imbalances in occupations such as family physicians, psychiatrists and personal support

workers have been found to be suffering the most from reduced supply (Drummond, 2022). These factors, in combination with high rates of turnover driven by the pandemic, have caused a substantial disruption in the supply of Canadian HCWs (Drummond, 2022).

At the same time, demand for HCWs is increasing substantially as a result of the aging population. The population of Canada aged 85 or older is recognized as one of the fastest-growing age groups in the country, increasing 12 percent between 2016 and 2021 and encompassing 2.3 percent of the total population (Statistics Canada, 2022b). Expanding further, 18 percent of the general population is made up of individuals aged 65 or older—an increase from 14 percent in 2011 (Canadian Institute for Health Information, 2021). This, in conjunction with the fact that individuals 65 years of age or older consume roughly 45 percent of all public sector health funding spent by the provinces and territories, indicates a troubling trend when considering the capacity of Canada's health care system (Canadian Institute for Health Information, 2021). This is further compounded when one considers that the average age of physicians in Canada has increased to roughly 49.2 years old as of 2020 (Michas, 2022). In 2019, 39 percent of these physicians were 55 years of age or older (Canadian Medical Association, 2019). This indicates a significant proportion of the physician population is nearing retirement age, thereby further driving the labour shortage.

2.2. Impact of Health Care Shortages on Patient Care

As a result of this shortage, Canadians are finding it increasingly difficult to access appropriate health care to suit their needs. As per Figure 1, 14.5% of Canadians over the age of 12 indicated that they did not have a regular health care provider in 2019, with other surveys indicating an increase to roughly 18% in 2021 (Statistics Canada, 2020; College of Family Physicians Canada, 2021). Additionally, with factors such as the aging baby boomer population increasing the burden on the health care system over time, it is likely that the shortages currently being experienced within Canada's health care system will continue into the future (Haddad et al, 2022; Malko and Huckfeldt, 2017).



Note: A regular health care provider is defined as a health professional that a person sees or talks to when they need care or advice about their health. This can include a family doctor or general practitioner, medical specialist, or nurse practitioner.
Source: Canadian Community Health Survey, 2019.

Figure 1: Percentage of population aged 12 and older without a regular health care provider, by age group and sex, 2019

This shortage has dire implications regarding the health and well-being of Canadians as such labor shortages have been shown to correlate with deficiencies in quality of care, increased wait times, reduced access to care, and higher morbidity and mortality rates (Haddad et al, 2022; Twigg et al, 2010; Prentice and Pizer, 2007). Such impacts are already being felt in the Canadian context. Roughly 50 percent of Canadians report being either unable to see the doctor they have within a week or trying but unable to find a doctor at all (Angus Reid Institute, 2022). Furthermore, only about 14 percent of Canadian adults indicate that they have a doctor and have easy access to that medical professional when needed (Angus Reid Institute, 2022). Access to medical care is further impeded when one takes into account variations in demand by physician specialty as well as disparities in access to care between rural and urban environments (Statistics Canada, 2020; Malko and Huckfeldt, 2017; Dumont et al, 2008; Wynoch, 2021).

Chapter 3.

Occupational Burnout

As it is currently understood, there are a number of potential contributing factors to the shortage of health care workers within Canada. One of the factors that has been identified most recently as contributing to the substantial departure of workers from the medical field is occupational burnout. This chapter provides a definition of occupational burnout and discusses the nature of its threat to public health and its prevalence in the Canadian context, as well as impacts it can have on worker and patient well-being. Notable burnout trends in the Canadian health worker population are also highlighted.

3.1. What is Occupational Burnout?

Occupational Burnout (also referred to as “burnout”) is a psychological syndrome that refers to a state of physical and emotional exhaustion resulting from chronic exposure to and mismanagement of work-related stress (World Health Organization, 2019; De Hert, 2020; Institute for Quality and Efficiency of Health Care, 2006; Maslach and Leiter, 2016). While there is no commonly accepted definition of Occupational Burnout in the literature, it is typically recognized as consisting of three major dimensions: feelings of energy depletion or emotional exhaustion; increased mental distance from one’s job, feelings of negativism or cynicism relating to one’s job, and reduced professional efficacy and personal accomplishment (World Health Organization, 2019; De Hert, 2020; Institute for Quality and Efficiency of Health Care, 2006; Maslach and Leiter, 2016). Importantly, burnout is recognized as being distinct from related factors such as job dissatisfaction, fatigue, occupational stress and depression (West et al, 2018). While such factors have been recognized as symptoms that correlate with burnout, burnout is recognized as being distinct from them and can exist in an individual regardless of their presence (West et al, 2018).

3.2. Occupational Burnout in Canada's Health Care System

While occupational burnout is recognized as being a potential threat to workers in any profession or industry, it has often been closely linked to “people-oriented professions” particularly those relating to health care (Maslach and Leiter, 2016; De Hert, 2020). Research has observed physicians as being at an increased risk of burnout relative to the general population (Shanafelt et al, 2022). One study found an incidence of symptoms of burnout of 37.9 percent of physicians, compared to 27.8 percent in the general population (Shanafelt et al, 2012). Characteristics of the health care environment such as: time pressure, administrative burden (i.e. paperwork), lack of control in how work is conducted, role conflict, intensive workloads, long hours, poor relationships between groups and leadership as a result of conflicts between medical and administrative priorities, and the emotional intensity of medical work can put HCWs at a higher risk of burnout than other occupations (Lyndon, 2015) These factors operate in tandem with demographic factors such as age and sex, compounding this propensity for burnout (Lyndon, 2015).

Recent surveys of HCWs identified occupational burnout as being the most common reason workers were considering departing their current occupation (Statistics Canada, 2022). More specifically, of HCWs departing the field, roughly 63.2 percent cited job stress or burnout as the primary reason, with the sentiment being more prevalent amongst nurses (70.9 percent) followed by care aides (51 percent) and physicians (48.2 percent) (Statistics Canada, 2022). Similarly, the second most common reason for departing the field was concerns for one's mental health and well-being as well as a lack of job satisfaction, both of which are linked to symptoms of burnout (World Health Organization, 2019; De Hert, 2020; Institute for Quality and Efficiency of Health Care, 2006; Maslach and Leiter, 2016).

It is worth noting that this data was collected against the backdrop of the COVID-19 pandemic, wherein roughly 36 percent of the general Canadian population indicated that their mental health had worsened since the beginning of the pandemic (Statistics Canada, 2022). As such, the intensity of these effects may become tempered as the impact of the pandemic fades. However, it should also be noted that burnout has long been recognized as a major concern by many academic resources and medical associations due to its disproportionate impact on HCWs (Maslach and Leiter, 2016; De

Hert, 2020). Similarly, discussion of health care burnout has been prominent in Canadian public discourse since as early as 2002 (Boudreau et al, 2006). This indicates that structural or systemic inadequacies surrounding occupational burnout and its contributing factors pre-date the onset of the pandemic and will continue to affect the HCW population unless action is taken.

3.3. The Impacts of Burnout on Worker Well-Being

The prevalence of occupational burnout has also been recognized as a direct threat to the health and well-being of health care personnel. Research has indicated linkages between occupational burnout and mental health concerns (i.e. feelings of anxiety and depression) that have the potential to contribute to substance abuse, broken relationships and suicidal tendencies amongst workers (De Hert, 2020). Koutsimani et al. (2019) found that there was a significant association between burnout and depression and burnout and anxiety. Furthermore, meta-analysis of relevant literature has found that burnout significantly predicts depressive symptoms or antidepressant treatment (Salvagioni et al, 2017). The emotional exhaustion and depersonalization elements of burnout are also strongly associated with alcohol abuse or dependence, with greater frequencies of such symptoms correlating with higher percentages of substance abuse (Oreskovich et al, 2012). Surveys of medical residents have shown that 20.5 percent of residents suffering from burnout have experienced suicidal ideation, in contrast to 7.6 percent of those not experiencing burnout (Van Der Heijden et al, 2008).

Burnout also has the potential to contribute to a number of physiological health concerns. Research has indicated that burnout and associated factors can increase one's risk of cardiovascular disease as much as factors such as body mass index and smoking. Studies have also linked burnout to an increased likelihood of type II diabetes, male infertility, sleep disorders, and musculoskeletal disorders by as much as 83 percent (Melamed et al, 2006).

3.4. The Impact of Burnout on Patient Care

The negative impacts of burnout are not only restricted to HCWs themselves, but also the patient population they serve. In addition to reducing access to care as a result of worker departure, feelings of reduced empathy or depersonalization associated with

burnout are recognized as having a detrimental impact on the standard of care patients receive (Lyndon, 2015). Clinicians suffering from burnout have been found to be more likely to rate patient safety lower in their organizations and to admit to having made mistakes or delivered substandard care (Lyndon, 2015). Some studies have linked burnout amongst physicians to a doubled risk of medical error and a 17 percent increase in the odds that one is named in a medical malpractice lawsuit (West et al, 2018). Research has also demonstrated a correlation between health care worker burnout and lowered perceptions of patient safety as well as higher patient mortality ratios in intensive care units (Welp et al, 2015; West et al, 2018). Other studies have found that burnout can be linked to suboptimal patient care resulting in lower patient satisfaction, impaired quality of care and medical errors (Haas et al, 2000; Grol et al, 1985; Melville, 1980; Shanafelt et al, 2002). This indicates the potential for health care worker burnout to not only come at substantial costs to the health and well-being of workers themselves, but also of the Canadian public as a whole.

3.5. The Impact of Burnout on Health Care Costs

The substantial turnover in HCW populations as a result of burnout also has troubling financial implications for the health care system. As noted previously, burnout acts as one of the main drivers for HCW resignation in Canada. Research conducted in the United States found that the cost of filling one physician vacancy can range from hundreds of thousands to over one million U.S. dollars in recruitment and replacement costs, depending on specialty, location of practice and the duration of the vacancy (Buchbinder et al, 1999; Dewa et al, 2014; Fibuch and Ahmed, 2015). More recent studies have estimated that physician burnout could cost the United States roughly 4.6 billion dollars per year (Blanding, 2019). Within Canada, the total estimated cost of burnout amongst all practicing physicians was found to be roughly 213.1 million dollars in 2014 (Dewa et al, 2014). Similarly, the cost of turnover amongst registered nurses has been estimated to be 1.2 to 1.3 times their salary (Dyrbye et al, 2017). These costs often come in the form of replacement and recruitment expenses, as well as losses in revenue, reduced clinical hours and declining quality of patient care (Fibuch and Ahmed, 2015; Dewa et al, 2014). Further costs to the health care system can be anticipated as a result of issues in productivity, absenteeism and medical errors that have been linked to burnout (West et al, 2009; West et al, 2006; Shanafelt, 2009). Research conducted by

the Centers for Disease Control and Prevention indicated that losses in productivity as a result of absenteeism have the potential to cost employers roughly 225.8 billion dollars annually in the United States (CDC Foundation, 2015). Given the recent increase in burnout amongst Canadian HCWs, these costs are likely to be far greater than previous estimates.

Chapter 4.

Predictors of Occupational Burnout: A Quantitative Analysis

In order to combat the issue of burnout in the Canadian health care system, it is first critical to understand what factors can be recognized as predictors of burnout in order to address root causes. This section conducts statistical analysis to shed light on the policy problem and help inform policy analysis. Using a combination of descriptive statistics and multivariate regression analysis, this chapter will build upon the existing academic understanding of burnout to better understand the prevalence of occupational burnout amongst HCWs in Canada and to identify various factors that contribute to it. Findings are discussed in the context of broader academic literature in order to provide in-depth understanding of variable relationships.

4.1. Data and Methodology

This paper uses data from Statistics Canada's 2021 "Survey on Health Care Workers' Experiences During the Pandemic" (SHCWEP) to analyze the relationship between occupational burnout and several variables that could potentially impact worker burnout. The survey data was accessed as a Public Use Microdata File¹ on Statistic Canada's website. The survey uses a stratified sample and cross-sectional design. The survey was conducted between September and November 2021 with the reference period encompassing 2020 to 2021. The target population consists of health care workers and those working in a health care setting at the start of the COVID-19 pandemic who reside in the ten provinces. This includes individuals who directly provide health care services to the public, technical support to medical staff, health care coordinators or supervisors, and emergency medical personnel (i.e. paramedics and firefighters). The dataset contained 12,139 observations; a sample large enough to be representative in strata. Of this sample, 8,463 did not indicate an intent to leave their current job, and were therefore excluded from the final sample in this paper. Additionally,

¹ Survey on Health Care Workers' Experiences During the Pandemic: Public Use Microdata File. <https://www150.statcan.gc.ca/n1/en/catalogue/13250006>

given the scope of this paper and the variables it is interested in examining, a number of alterations were made to the original dataset. Observations that had missing or non-applicable values were excluded. Additionally, some survey questions such as the availability of professional emotional support were evaluated on a 5-point scale wherein 3 was a middle point with no ordinal value. In such instances, responses of 3 were recoded as non-applicable and removed from the dataset. Once these alterations were completed the dataset consisted of 1,273 observations.

Appendix A. outlines the questions from the SHCWEP that were used to derive the variables in this study. The survey contains a module relating to workers' job intentions (i.e., how long they are planning to stay in their current job).² Respondents who did not plan to stay in their current job for longer than 3 years were asked "what are the reasons that you might consider leaving or changing your job?" with a selection of answers including "burnout" as potential responses.³ Responses to this question were used to identify workers who experience burnout, which is used as the dependent variable in this regression analysis. Burnout is measured via one's intent to depart their current occupation as a result of experiencing burnout (yes vs. no). Most variables under examination are dummy variables, these variables are as follows: service delivery (virtual care only, vs. other service delivery), sex (male vs. female), change in delivery (no vs. yes), communication with friends, family, peers (yes vs. no); communication with health professional (yes vs. no), communication through social media (yes vs. no), meditation/spiritual guidance (yes vs. no), exercise (yes vs. no), hobbies (yes vs. no), adequate sleep (yes vs. no), immigrant status (immigrant vs. non-immigrant), increased workload (yes vs. no). and professional emotional support (support offered vs. no support offered). Age, household income and number of household members were all measured as ordinal variables, while job setting, occupation and province of work were measured as categorical variables. A breakdown of these variables and their associated hypotheses is included in Table 1 below. Variables were selected based on relevance in extended literature, a more comprehensive exploration of this literature will be conducted in the "Discussion" section .

² JI_Q05: "How long are you planning to stay in your current job?", EMP_Q05: "Are you a health care worker or do you work in a health care setting?" Job intention was derived from responses to JI_Q05 of less than three years and responses to EMP_Q05 of "yes"

³ JI_Q10: "What are the reasons that you might consider leaving of changing your job?"

Table 1: Explanatory Variables and Hypotheses

Explanatory Variable	Hypothesis
Sex (male vs. female)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Age (groupings based on increments of 10)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Service delivery (virtual only vs other)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Job setting (acute care, long-term care, outpatient and ambulatory care)	$H_0: AOR = 1$ $H_A: AOR \neq 1$
Province of work (Atlantic provinces, Ontario, Quebec, BC, Saskatchewan, Manitoba, or Alberta)	$H_0: AOR = 1$ $H_A: AOR \neq 1$
Professional emotional support available (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Change in delivery (yes vs. no)	$H_0: AOR \leq 1$ $H_A: AOR > 1$
Number of household members (1 to 4 or more)	$H_0: AOR \leq 1$ $H_A: AOR > 1$
Communication with friends, family, peers (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Communication with health professional (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Communication through social media (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Meditation or spiritual guidance (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Exercise (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Hobbies (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Adequate sleep (yes vs. no)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Household income (grouped: under \$100,000, \$100,000 to \$149,000, or \$150,000 or more)	$H_0: AOR \geq 1$ $H_A: AOR < 1$
Immigrant status (Immigrant vs. non-immigrant)	$H_0: AOR \leq 1$ $H_A: AOR > 1$
Occupation (physician, nurse, personal support workers or care aides, or other)	$H_0: AOR = 1$ $H_A: AOR \neq 1$
Increased Workload	$H_0: AOR \leq 1$ $H_A: AOR > 1$

4.2. Descriptive Analysis

Table 2 below provides summary statistics for variables used in this analysis.

Table 2: Summary Statistics

Variable	<i>Do not intend to leave current profession due to burnout</i> (0) (N = 628)	<i>Intend to leave current profession due to burnout</i> (1) (N = 645)			
Service Delivery			Sex		
(0) <i>Other service delivery</i>	95.9%	98.0%	(0) <i>Female</i>	83.8%	89.1%
(1) <i>Virtual care only</i>	4.1%	2.0%	(1) <i>Male</i>	16.2%	10.9%
Age			Number of Household Members		
(0) <i>Under 55</i>	35.2%	74.3%	(1) <i>One-person household</i>	19.4%	12.6%
(1) <i>55 years or older</i>	64.8%	25.7%	(2) <i>Household has 2 people</i>	49.4%	40.6%
			(3) <i>Household has 3 people</i>	13.9%	16.9%
			(4) <i>Household has 4 or more people</i>	17.4%	29.9%
Household Income			Change in Delivery		
(0) <i>Under \$100,000</i>	54.6%	58.3%	(0) <i>No</i>	31.5%	30.1%

(1) \$100,000 or more	45.4%	41.7%	(1) Yes	68.5%	69.9%
Province of Work			Job Setting		
Alberta	8.6%	13.8%	Acute Care	38.4%	50.7%
Atlantic Provinces	35.0%	32.1%	Community/home care	11.9%	6.4%
*BC	11.8%	12.7%	Long-term care	18.9%	17.5%
Manitoba	11.5%	9.0%	Outpatient and ambulatory care	21.5%	14.7%
Ontario	11.6%	14.0%	*Other	9.2%	10.7%
Quebec	13.9%	8.1%			
Saskatchewan	7.6%	10.4%			
Communication with Friends, Family, Peers			Communication with Health Professional		
(0) No	7.3%	8.4%	(0) No	74.4%	65.7%
(1) Yes	92.7%	91.6%	(1) Yes	25.6%	34.3%
Communication through Social Media			Meditation or Spiritual Guidance		
(0) No	60.5%	64.3%	(0) No	74.0%	71.0%
(1) Yes	39.5%	35.7%	(1) Yes	26.0%	29.0%
Exercise			Hobbies		
(0) No	25.3%	36.6%	(0) No	33.8%	39.5%

(1) Yes	74.7%	63.4%	(1) Yes	66.2%	60.5%
Adequate Sleep			Immigrant Status		
(0) No	31.2%	43.9%	(0) Non-immigrant	86.8%	89.8%
(1) Yes	68.8%	56.1%	(1) Immigrant or non-permanent resident	13.2%	10.2%
Increased Workload			Professional Emotional Support Offered		
(0) No	42.5%	14.0%	(0) No support offered	26.1%	58%
(1) Yes	57.5%	86.0%	(1) Support offered	73.9%	42%
Occupation					
Nurses	36.8%	50.9%			
Personal support or care aides	26.1%	17.2%			
Physicians	15.1%	9.5%			
*Other	22.0%	22.5%			

Note: (*) Represent categories omitted from regression analysis in order to avoid multicollinearity

4.2.1. Demographic Variables

Individuals aged 18 to 34 comprised the largest portion of those intending to leave their current job as a result of burnout (34.9%) followed by those aged 55 or older. This indicates a non-linear trend between age and burnout, potentially suggesting that individuals who are in the earlier or later stages of their career are more likely to quit when burnout is substantial. Women comprise a larger portion of those departing their position as a result of burnout (89.1%) than men. This could be due to a variety of

factors such as women often being seen as more susceptible to burnout than men or gender inequity in the labour market making career changes more viable for men. Interestingly the composition of those departing due to burnout by household size was also nonlinear, with households of 2 and households of 4 comprising 40.6 percent and 29.9 percent respectively. As expected, individuals with lower household incomes (under \$100,000) comprised a larger portion of those who intended to leave their current jobs due to burnout (41.7%), although the highest recorded income level (\$150,000 or more) comprised the next largest portion (36.7%). Lastly, immigrants only comprise 10.2 percent of individuals departing their occupation due to burnout.

4.2.2. Occupational Variables

Those who offered services other than virtual care comprise a majority of both those intending to depart their jobs due to burnout and those who did not. Individuals who work in acute care settings comprised the majority of those suffering from burnout (50.7%), with long-term care professionals and outpatient and ambulatory care professionals comprising the second and third largest portions (17.5% and 14.7% respectively). Of the provinces of work surveyed, the Atlantic Provinces comprise the largest portion of individuals suffering from burnout (32.1%), followed by Ontario (14.0%) and Alberta (13.8%). Somewhat surprisingly, more respondents indicated that they did not experience a change in service delivery over the course of the pandemic. Despite this, individuals who did experience such a change comprised 69.9 percent of those intending to leave their current jobs due to burnout. Nurses comprised 50.9 percent of those who intended to quit due to burnout, followed by “other” occupations (22.5%), and personal support or care aides (17.2%). Interestingly, physicians made up the smallest portion of individuals quitting due to burnout (9.5%). This could be due to the fact that physicians are further removed from more menial tasks such as data entry and paperwork than occupations such as nurses, indicating that such practices can be substantial drivers of burnout. Finally, a majority of workers who intended to leave their current job due to burnout indicated that they experienced an increased workload during the pandemic (86.0%).

4.2.3. Behavioural Variables

With regards to communication practices, a majority of individuals who intended to leave their current jobs due to burnout maintained some form of communication with friends, family or peers; conversely, only 34.3 percent indicated that they maintained communication with health professionals, and 35.7 percent communicated with others via social media. Engaging in exercise appeared to be the most popular form of wellness practiced by individuals departing due to burnout with 63.4 percent indicating they were engaging in exercise to maintain or improve their health. Conversely, meditation and spiritual guidance were the least popular wellness activities recorded, with only 29 percent of burnout sufferers engaging in such practices.

4.3. Logistic Regression Results

This section conducts a logistic regression analysis to examine the association between burnout and each of the explanatory variables while isolating the effect of other variables. Logistic regression is used due to the binary nature of the dependent variable. Table 2 provides an overview of the predicted odds ratios of the dependent variable for each independent variable within the model (Raw R outputs can be found in Appendix B).

Table 3: Predictors of Burnout, Odds Ratios

	Odds Ratio	Std. Error
(Intercept)	1.287	0.689
Service delivery (Virtual care only vs. other service delivery)	0.558	0.406
Age (55 or older vs. under 55)	0.301***	0.151
Sex (Male vs. Female)	1.142	0.231
Income (Under \$100,000 vs. \$100,000 or more)	1.080	0.162
Professional emotional support (No support offered vs. support offered)	0.351***	0.139
Job setting: Acute	1.122	0.264
Job setting: Community	0.780	0.368
Job setting: Outpatient	0.915	0.277

Job setting: Long-term	0.777	0.323
Province of work: Quebec	0.573**	0.283
Province of work: Alberta	1.493	0.278
Province of work: Manitoba	0.766	0.282
Province of work: Ontario	1.156	0.267
Province of work: Atlantic provinces	1.053	0.233
Province of work: Saskatchewan	1.183	0.290
Household members	1.095	0.075
Communication: friends, family, peers (Yes vs. no)	1.184	0.259
Communication: health professional (Yes vs. no)	1.459**	0.149
Communication: social media (Yes vs. no)	0.788*	0.142
Immigrant status	0.900	0.221
Meditation/Spiritual guidance (Yes vs. no)	1.227	0.154
Exercise (Yes vs. no)	0.581***	0.154
Hobbies (Yes vs. no)	1.090	0.148
Adequate sleep (Yes vs. no)	0.708**	0.147
Occupation: Nurse	1.091	0.206
Occupation: Physician	0.729	0.273
Occupation: Personal support	0.858	0.287
Increased workload (Yes vs. no)	2.894***	0.163

*p<0.05; **p<0.01; ***p<0.001

4.4. Discussion

Delivering only virtual care services over the reference period was associated with a decrease in the odds of departing one's job due to burnout (OR: 0.558) compared to those that offered services in other formats, although this relationship was not statistically significant. While academic literature surrounding this relationship is still fairly novel, it could be suggested that this relationship is due to the fact that virtual or

distanced care offers HCWs more flexibility in their day-to-day activities, allowing them to use their time more efficiently (Sullivan et al, 2022). Additionally, in light of COVID-19 and the broader context of infectious disease treatment, the use of virtual care tools can conceivably reduce contributors to burnout that occur as a result of fear of infection.

Individuals aged 55 or older were found to have reduced odds of job departure due to burnout compared to individuals under 55 (OR: 0.301), a relationship that was significant at the 1 percent level. This finding aligns with much of the literature on the subject. Burnout as a general phenomenon impacting workers of all types is recognized as decreasing with age (Marchand et al, 2018; Hybels et al, 2022). A variety of factors are recognized as potentially being responsible for this relationship such as: lower psychological-physical demands, higher job security, and improved work conditions as individuals grow older (Marchand et al, 2018; Hybels et al, 2022). It is also possible that older individuals are further in their careers or simply closer to retirement age, and thus see early departure due to burnout as less necessary. This could also be due to increased prioritization of mental health and work-life balance amongst younger professionals. Among physicians, those under the age of 55 have been found to be at more than double the risk of experiencing burnout symptoms than those over 55 (West et al, 2018; Patel et al, 2018).

As anticipated, individuals who felt that professional emotional support was available demonstrated a notable reduction in the odds that they would quit as a result of burnout. Those that felt such support was available were found to have decreased odds of job departure due to burnout (OR: 0.351), an effect that was significant at the 1 percent level. Research has shown that techniques such as the use of Cognitive Behavioural Therapy or Acceptance and Commitment Therapy have the potential to effectively reduce burnout (Ahola et al, 2017; Perski et al, 2017; Towe-Swift et al, 2022). Intuitively, the presence of professional emotional supports such as counselling can assist individuals in identifying issues and contributors that could potentially drive burnout. Additionally, offering health care workers access to such resources can offer insight into potential strategies and exercises one can engage in order to mitigate the negative effects of burnout.

Generally, engagement in wellness practices such as exercise and ensuring adequate sleep was associated with decreased odds of job departure due to burnout.

Exercise was found to be the most substantial in this regard (OR: 0.581), significant at the 1 percent level. Similarly, individuals who ensured that had adequate sleep regularly had reduced odds for job departure due to burnout (OR: 0.708), significant at the 5 percent level. These findings are supported by a wide body of literature that links such wellness practices to reductions in factors commonly associated with stress and burnout such as emotional exhaustion (Malik and Annabi, 2022; Anderson et al, 1999; Romani and Ashkar, 2014; Soderstrom et al, 2012; Toker and Melamed, 2017; Seidman and Zager, 1991; Canadian Medical Association 2022). Interestingly, HCWs that engaged in hobbies or meditation displayed increased likelihood that they would quit as a result of burnout (OR: 1.090 and OR:1.227, respectively), although not at a statistically significant level. More research should be conducted to further examine this relationship, however this could indicate a two-sided relationship between these variables as individuals who are experiencing high levels of stress or burnout may simply be more inclined to engage in practices such as meditation than those who are not experiencing such stresses.

A similar relationship can potentially be seen with regards to one's communication with health professionals. Individuals who indicated that they were currently communicating with health professionals in order to maintain or improve their health were found to have increased odds of departing their current job due to burnout (OR:1.449), significant at the 5 percent level. This could also indicate that there is a two-sided relationship between these variables as individuals experiencing high levels of stress or burnout could be more likely to seek assistance from health professionals than those that do not. Interestingly, those who communicate through social media were found to have decreased odds of departing their occupation as a result of burnout (OR:0.788). This could be due to communication with others over the internet replicating the same mental health benefits that communication with friends, family or peers is associated with in broader literature (Shin and Lee, 2016; Fiorilli et al, 2019; Isenhardt et al, 2019). This would be particularly likely in the context of the pandemic as individuals fearful of catching or spreading COVID-19 as well as those experiencing lockdown orders could utilize social media to maintain social supports.

Of the provinces of work included in the model, Quebec and Manitoba were the only ones found to have a negative relationship with the odds that one would depart their job as a result of burnout (OR:0.573 and OR:0.766 respectively). Notably, Quebec was the only province to have a statistically significant relationship with the dependent

variable. In contrast, individuals who worked in Alberta were found to have the largest increase in the odds of departing their jobs due to burnout, albeit not at a statistically significant level (OR:1.493). The relationship between one's province of work and burnout is particularly difficult to explain as preliminary exploration of literature and relevant policies does not indicate any notable variation in burnout trends or practices between provinces. While literature exists to suggest that HCWs working in small towns or isolated areas may be more likely to experience burnout, such a relationship would not fully explain the disparity seen here (Benson et al, 2016). As such, these relationships should be examined further by future researchers.

The most substantial predictor of job departure due to burnout was found to be an increase in workload (OR: 2.894). This is unsurprising as workload is commonly recognized as one of the most substantial drivers of burnout. More specifically, occupational burnout and job-related stress are typically associated with high administrative burden and job demands. Health care workers typically report that administrative duties often negatively impact their ability to deliver high-quality care, with those that report higher percentages of time spent on administrative tasks exhibiting lower levels of career satisfaction and higher levels of burnout (Rao et al, 2017; Hillmann et al, 2021). Additionally, inefficient work processes such as those typically required with routine data entry and administrative documentation have been shown to contribute to burnout symptoms amongst health care workers such as physicians (West et al, 2018). This indicates that particular attention should be given to reducing HCW workload by policymakers.

While less significant, there were a number of additional notable findings. Immigrant HCWs were also found to display reduced odds of job departure due to burnout (OR:0.900). While there is scant empirical research examining this relationship, a recent study conducted by Otuonye et al (2022) found that immigration status mitigated risk of emotional exhaustion amongst American physicians. When compared to non-immigrants, first generation immigrants were found to be 49 percent less likely to report burnout symptoms, with a non-statistically significant trend towards reduced exhaustion amongst second generation immigrants (Otuonye et al, 2022). While this relationship is not yet fully understood, West et al (2011) hypothesized that international medical graduates could be less prone to burnout as a result of their successful navigation through the residency selection process. Additional hypotheses contend that

differences in medical school curricula, and cultural differences in developing countries could also play a role (Otuonye et al, 2022).

Relationships between sex and number of household members both contradicted their understandings in established literature, although sex was not found to be statistically significant. While literature generally suggests women are more prone to burnout, men were found to have increased odds of quitting due to burnout in this analysis (OR:1.142). This could indicate that, while both sexes are susceptible to the syndrome, men may have more confidence in their ability to find another occupation after quitting due to factors such as gender inequity in the employment market. Additionally, the odds that one would quit due to burnout increased by a factor of 1.095 per 1 person increase in household size. This is an interesting finding as it suggests that the presence of more individuals in one's household may not have the therapeutic, stress-alleviating impact found in other studies (Pearson, 2015; Oh and Neal, 2021). This relationship could be due factors such as increased feelings of responsibility for others in one's household or additional caretaking duties for those who share households with children, elderly relatives, or those with chronic conditions (Pearson, 2015).

Lastly, nurses and those working in acute care settings were the only categories for their respective variables that displayed increased odds of quitting as a result of burnout (OR:1.091 and OR:1.122 respectively), although without statistical significance. While little research exists regarding explanatory factors for these relationships, studies have found notable differences in levels of stress and burnout between those working in acute care and those in other job settings, as well as between nurses and other HCW professions (Stone and Harahan, 2010; Maunder et al. 2021a; Maudner et al, 2021b). While more research will need to be done to substantiate these relationships, such disparities in job setting and occupation should be noted and taken into account when designing policy solutions.

4.5. Summary of Findings and Implications for Policymakers

This analysis offers several significant findings with regards to fully understanding burnout and designing policies to combat it in Canada's health care

system. The findings of this analysis can be used to develop and refine a demographic profile of those who are particularly susceptible to burnout amongst HCWs. Specifically, younger male HCWs are a particular group that policy interventions intent on reducing burnout in the health care system may wish to target. Furthermore, specific attention should be given to those working as nurses, and those operating in acute care settings given their heightened propensity for job departure due to burnout relative to other job settings and occupations.

Additionally, this research has identified a number of practices that have been linked to reduced probability of job departure due to burnout that should be acknowledged and incorporated into policy design. Most notably, policies aimed at reducing burnout in the health care system should attempt to reduce the workloads of HCWs as much as possible given its substantial impact on burnout. Additionally, policy solutions should attempt to incorporate the provision of professional emotional support services in their design. This can come in a variety of forms, such as direct counselling, informational campaigns to raise awareness of existing supports, as well as educational campaigns regarding proper wellness practices such as engaging in exercise and ensuring proper sleep. Lastly, while still relatively novel, the substantial impact of virtual service delivery on reducing the probability that one would quit as a result of burnout should signal policymakers to attempt to build on this positive relationship and existing infrastructure, expanding or emphasizing virtual care in proposed policy solutions.

4.6. Limitations

It should be noted that this data was collected over the course of the pandemic. Consequently, the data within this study could be viewed as existing in a snapshot wherein Canada's health care system was particularly strained, thereby resulting in more severe negative impacts on health care workers. However, examining HCW experiences within such a snapshot can still provide valid information, offering insight into an overburdened Canadian health care system that will likely become more relevant if the labour shortage is not addressed. Additionally, the fact that the data used in this analysis was restricted to only HCWs who intended on leaving their job due to burnout presents a notable limitation as it likely does not encompass all workers who are experiencing burnout, but instead only those experiencing it at a level of severity that warrants job

departure. However, given the relevance of burnout in the context of a labour shortage, this restriction still provides valuable insights that can contribute to meaningful findings.

Chapter 5.

Multi-Criteria Policy Analysis

This chapter outlines the five major policy options being considered in order to address the issue of occupational burnout among health care workers, as well as the criteria and measures that will be used to assess the benefits and drawbacks of each proposed policy. Findings from the quantitative analysis and extended literature are used to inform the design and implementation of policies as necessary.

5.1. Policy Criteria and Measures

In measuring the strength of each proposed policy option, a series of five criteria were selected. These criteria consist of effectiveness, administrative complexity, public support, stakeholder support, and cost. Given that the intent of each policy option is ultimately to reduce burnout amongst HCWs, effectiveness is assigned a double weight as it is the key criterion in this analysis. An in-depth breakdown of these criteria as well as the specific measures that are utilized in order to gauge policy strength in each category is explored in Table 6 in Appendix C. Information from broader academic literature and the quantitative analysis previously conducted in this paper are used to inform the evaluation of each policy options with reference to these criteria.

5.1.1. Effectiveness (Key Objective Criterion)

Effectiveness is recognized as the key objective criterion for assessing policy strength in this paper. The central objective of this policy analysis is to reduce occupational burnout amongst Canadian health care workers. The results of the quantitative analysis show that 86 percent of HCWs intending to quit as a result of burnout indicated that they had experienced an increase in workload in recent years, which increases the likelihood that one will quit as a result of burnout. Thus, a policy's anticipated effect on reducing HCW workload is considered when evaluating impact on occupational burnout.

Furthermore, the results of the quantitative analysis found that several factors such as the delivery of virtual care services, presence of professional emotional supports, engaging in proper exercise, ensuring adequate sleep and communicating via social media were associated with decreases in the odds that one would depart their job due to burnout. As such, the ability of a policy to facilitate the reduction of burnout via such factors is also considered when evaluating the strength of a policy option against this criterion.

Effectiveness is scored on a 3-point scale comprised of “little to no reduction in levels of burnout”, “moderate reduction in levels of burnout”, and “significant reduction in levels of burnout” representing levels 1, 2 and 3 respectively. Using this scale, larger reductions in burnout levels are scored higher. The score of this criterion is double weighted given that this criterion represents the key objective of a given policy.

5.1.2. Administrative Complexity

Administrative complexity refers to the burden or difficulty associated with the implementation and maintenance of a given policy and is another notable consideration. Intuitively, policies that require more complex intervention from governments or policymakers are often more difficult to coordinate and manage. This criterion will be measured via examining the degree of coordination across stakeholders and administrative bodies a policy requires as well as the number of stakeholders that the government will need to engage with as a result of a given policy’s use. This criterion uses a 3-point scale with “high complexity”, “moderate complexity” and “low complexity” representing levels 1, 2 and 3 respectively; the lower the level of administrative complexity, the higher a policy’s score.

5.1.3. Public Support

Public support refers to the degree to which a proposed policy is supported or opposed by the general population. The level of public support a policy receives is an important factor to consider given the ability for public backlash or enthusiasm to aid or hinder a policy’s adoption and implementation. This criterion is measured as the projected level of support a policy will receive from the public on a 3-point scale: 1= “low support”, 2= “moderate support” and 3= “high support”.

5.1.4. Stakeholder Support

Stakeholder support generally refers to the degree of support a policy option receives from relevant actors and interests. Given the specific population of interest in this paper, the stakeholder group focussed on by this criterion is the health care workers that will be directly impacted by a proposed policy's implementation and effects. Additional consideration will also be given to health authorities and professional associations as well as government agencies. The measure for this criterion is the projected level of support a policy option receives from health care workers using a 3-point scale of "low acceptance," "moderate acceptance," and "high acceptance" with "high acceptance" scoring higher.

5.1.5. Cost

The final criterion used to assess the strength of policy options will be cost. The budgetary impacts of a given policy option are critical in assessing whether a proposed option will be financially viable. The measure for budgetary cost is either the costs a policy will incur as a result of direct funding or the costs associated with the production of materials or infrastructure necessary to implement a policy. This criterion is measured via a 3-point scale wherein 1= "high cost to budget", 2= "moderate cost to budget" and 3= "low cost to budget." In this regard, the lower the cost to budget a policy incurs, the higher a policy will score.

5.2. Policy Options

This paper proposes five major policy options to address the issue of burnout amongst health care workers. These options are selected based on the results of the quantitative analysis conducted previously as well as a review of relevant academic literature. The key objective for each policy option is to reduce levels of burnout within the Canadian health care worker population. Policy options are described in detail below.

5.2.1. Option 1: Data Collection and Elimination of Select Administrative Forms and Practices

Given the significance of increased workloads as the main predictor of job departure due to burnout among HCWs, a primary concern of policymakers should be to reduce health care workloads. As noted previously, academic literature has identified administrative burden as a major contributor to job-related stress and burnout (Rao et al, 2017; Hillmann et al, 2021). As such, there is a general consensus amongst relevant literature that administrative burden on health care professionals must be reduced in order for the issue of occupational burnout to be alleviated (Rao et al, 2017; Hillmann et al, 2021). In light of this, the first policy option would consist of a dual-pronged data collection process conducted by federal or provincial governments, with the aim of identifying particular administrative practices and forms that are recognized as being overly burdensome or unnecessary by workers.

The first aspect of this process would consist of a national survey of health care workers modeled after Nova Scotia's "Physician Administrative Burden Survey". In this regard, governments would partner with and consult various health authorities, and professional associations in order to design a comprehensive survey to identify specific sources of administrative burden within the health care worker population. The survey should incorporate quantifiable measures for administrative burden such as time spent on administrative tasks (i.e. medical forms, doctor's notes, billing, requisition forms, etc.) or time spent on work considered to be unnecessary. The survey would be distributed using employee directories and membership distribution lists for medical associations and workplaces throughout the country. This survey can also be supplemented by internal review of administrative tasks using and adapting analytical frameworks such as that created by the American College of Physicians (Erickson et al, 2017). Using a framework such as this will allow individuals to evaluate administrative tasks in accordance with a set list of criteria in order to determine whether such tasks are reasonable or require revision/elimination.

In addition to the survey, governments should also implement an electronic system that allows health care workers to submit similar issues of unnecessary burden within Electronic Health Record (EHR) programs. Workers would be asked to look at their daily documentation experiences and nominate anything within the EHR that was

considered unnecessary or overly burdensome. Submissions would be reviewed by a designated working group that would address minor concerns and recommend more significant concerns for review.

An existing program such as the “Getting Rid of Stupid Stuff” (GROSS) program employed by Hawaii Pacific Health can be used as a model for this program. The GROSS program was implemented by Hawaii Pacific Health in 2017. Between 2017 and 2020 the program received over 450 submissions identifying practices that were “never meant to occur”; “needed but could be more efficient”; or “required but not understood” and implemented a variety of administrative changes to alleviate concerns. One such example was the removal of the “Acknowledge, Introduction, Duration, Explanation and Thank you” approach in nurses’ rounding documentation (American Medical Association, 2020). Removal of this task saved approximately 1,700 nursing hours per month across four hospitals. A similar program that followed the GROSS model resulted in 563 submissions from health care workers over 2 years and saw alterations to or eliminations of 58 percent of practices mentioned (Connelly et al, 2021).

Following this process, policymakers should introduce targeted reforms aimed at eliminating or modifying practices that were identified through data collection as being particularly burdensome. The level of collaboration required in this process will vary based on the practice that is identified and whether it is enforced internally within an organization or required by government. Implementation of these reforms will likely need to be carried out on a case by case basis depending on the practice being altered. Doing this will allow governments to more effectively focus future policies on specific actions that will result in tangible reductions of administrative burden and consequently lead to reduced levels of burnout among health care workers.

5.2.2. Option 2: Expand Scopes of Practice for Allied Health Care Workers

While reduction of burnout is necessary in order to improve retention of health care workers, the importance of reducing burnout through more manageable workloads likely requires increased capacity that only additional manpower can provide. Thus, policy option 2 would work to expand the scopes of practice for allied health care workers such as nurse practitioners, pharmacists, personal support workers, therapists,

paramedics, and physician assistants, amongst others. The expansion of these roles should align with their respective competence and capabilities and should prioritize minimizing skill duplication between professions. Studies conducted in provinces such as Nova Scotia and Ontario indicated that particular allied health professionals felt notably unable to practise to their full scopes (Government of Nova Scotia, 2022; Delvin et al, 2018). In this regard, inspiration can be drawn from British Columbia's health human resources strategy. This strategy has already seen the expansion of roles such as pharmacists and paramedics within the province. Pharmacists have been empowered to adapt and renew prescriptions for a wider range of drugs and medical conditions as well as to administer a broader variety of drugs by injection or intranasally (Government of BC, 2022). Additionally, new regulations will enable pharmacists to prescribe for minor ailments and contraception in spring 2023 (Government of BC, 2022). Paramedics have also been empowered to provide a broader range of services to better care for individuals during emergencies (Government of BC, 2022). This policy option would see similar scope of practice expansions for these roles across provinces, as well as for additional allied professions in order to reach their full potential. Dedicated funding for this policy would vary depending on a variety of factors including the particular profession being expanded. This funding would need to be implemented within existing provincial payment models.

5.2.3. Option 3: Recognize and Integrate Community Health Workers into Broader Health and Social Services

Policy option 3 would see the formal recognition of community health workers (CHWs) as part of the health workforce by federal and provincial health ministries and their subsequent integration in patient medical homes (PMHs). PMHs are medical practices that operate within primary care networks to provide longitudinal patient care. Community health workers generally work to increase access to health and social services for marginalized groups via health promotion and educational activities, the prevention and management of infectious or chronic diseases, and providing medical care or clinical support to patients (Torres et al, 2014). As it stands, CHWs are considered to be underrecognized and underutilized within the health care system (Torres et al, 2014). While levels of education amongst CHWs can vary, workers generally have an understanding of the Canadian health care system, as well as working knowledge of health practices necessary for their area of occupation (Torres et al, 2014).

Many CHWs are foreign-trained professionals who have been unable to find employment in their original fields upon arriving in Canada (Torres et al, 2013). Scopes of practice for CHWs can vary depending on their location and the organization they work for, however properly trained CHWs often assist with administering vaccinations, community resource linkage, system navigation, communication between clinician and patient, ensuring access to primary care, and managing chronic conditions, amongst other tasks (Najafizada et al, 2015; Martinez et al, 2011; Torres et al, 2013; CHWNetwork, n.d.). These interventions consequently have been found to result in increased health screening, better understanding between individuals and health and social services, increased use of health care services, improved adherence to health recommendations, reduced need for emergency and specialty services, redistribution of workloads, and reduced health care costs (U.S. Department of Health and Human Services, n.d.; Martinez et al, 2011).

Specifically, this option would require federal and provincial health ministries to formally recognize CHWs as part of Canada's health workforce and subsequently integrate them more cohesively into PMHs and hospitals as members of multidisciplinary health care teams. This integration would see CHWs continue to deliver the same care services as they currently do but operate more closely with core HCWs thereby freeing more specialized health care professions such as nurses and physicians to engage in work more suited to their competencies. This recognition would require the creation of a formal definition for the discipline by provincial health ministries as well as the creation of set curriculum or standardized training for the occupation in each province, although preliminary models have already been created by professional associations. Additionally, dedicated funding would be necessary in order to cover the work hours of CHWs to fully deliver required services including administrative support work. This funding would need to be implemented within existing provincial payment models used to fund PMHs.

5.2.4. Option 4: Mental Health Awareness and Educational Campaigns

Policy option 4 would develop a comprehensive educational campaign aimed at expanding the awareness and understanding of mental health concerns amongst the health care worker population. While the federal government already has similar initiatives underway, none appear to be specifically tailored to the health care community. Policy option 4 would employ the use of media campaigns and educational

programs to be administered and disseminated in partnership with workplaces and medical associations around the country using employee registries and membership databases as distribution lists. Educational materials would be disseminated via internal memos as well as communications within organizations and would place specific emphasis on how to identify symptoms and severity of burnout, raising awareness of relevant resources and supports workers can make use of, and normalizing the use of such supports in order to combat stigmas within the HCW population. Additionally, the flexibility of such a policy would allow it to be effectively tailored to prioritize wellness practices and predictive factors as identified by the quantitative analysis. As such, informational materials should work to inform workers of wellness practices such as exercise and ensuring adequate sleep that they can engage in to directly reduce burnout. Additionally, the dissemination of such materials should be targeted to high risk groups as identified by the quantitative analysis, such as younger male workers as well as those working in nursing or acute care settings.

In addition to educational materials themselves, the use of workshops and workplace training programs should also be employed to offer workers additional opportunities to engage in mental health awareness exercises. Such workshops would vary in timing and frequency based on the particular workplace or association that is administering them but should generally be considered optional so as to not place additional burden on health care workers.

This program can follow the example set by the United States Center for Disease Control's Health Worker Mental Health Initiative (Cunningham et al, 2022). In doing this, the program should focus on five main objectives:

1. Understanding burden: Exploring the personal, social and economic consequences of poor mental health outcomes
2. Assimilating evidence: Gathering information regarding best practices, resources and interventions
3. Partnering for impact: Supporting partnership efforts with relevant parties and stakeholders

4. Identifying or adapting tools: improving data, screening tools, training, resources, and policies for sustainable change
5. Generating awareness: Conduct a national, multi-dimensional information campaign to raise awareness of mental health concerns, destigmatize mental health assistance, lower barriers for care-seeking and inspire positive change.

5.2.5. Option 5: Facilitate Interjurisdictional Virtual Care Registration for Physicians and Nurses

The final policy option would reduce the workload faced by health care workers by introducing a pilot program to facilitate interjurisdictional virtual care registration across provinces. Current licensure and registration systems restrict medical practice to the province or territory in which a nurse or physician is licensed. These restrictions impede the mobility and flexibility of the health workforce, requiring lengthy application processes and exorbitant fees to practice in other provinces. Given that virtual service delivery was associated with reduced odds of job departure due to burnout in the quantitative analysis, implementing an interjurisdictional virtual care registration system would directly reduce burnout amongst HCWs. Additionally, implementing such a system would offer workers greater flexibility to fill locum positions in staffing crunches and assist underserved communities via virtual care. This would allow workloads to be distributed more equitably across the health care workforce, allowing workers to place greater emphasis on work-life balance and wellness practices.

A similar program between the College of Registered Nurses of Alberta and the College of Registered Nurses of Saskatchewan can be used as a model for the intervention or expanded to additional provinces if possible (College of Registered Nurses of Alberta, 2021). This pilot program would require interested provincial licensure bodies to develop a joint regulatory framework for interjurisdictional virtual care using existing nursing and physician regulatory guidelines. Participating workers would be required to abide by standardized legal and professional requirements to provide competent and appropriate care to all individuals regardless of their jurisdiction. This framework would allow provinces to opt-in to a system of interjurisdictional virtual care, permitting health care workers to offer virtual care services outside of their primary jurisdiction.

Chapter 6.

Analysis of Policy Options

Each policy option under examination is evaluated with the criteria and measures outlined in Chapter 5. Scores are summarized in the table at the end of this chapter.

6.1. Analysis of Option 1: Data Collection and Elimination of Select Administrative Forms and Practices

Policy option 1 does not directly reduce burnout amongst health care workers, but rather relies on indirect reduction via reduced administrative burden. However, using the GROSS program and the “Physician Administrative Burden Survey” as examples, there is evidence to suggest that such programs would be effective. The Physician Administrative Burden Survey in Nova Scotia resulted in 38 percent of the administrative work completed by physicians being recognized as unnecessary, with 14 percent having the potential to be eliminated completely (Nova Scotia Office of Regulatory Affairs and Service Effectiveness, 2020). Furthermore, a number of administrative practices were recognized as being the top contributors to unnecessary burden including: medical forms, doctor’s notes and shadow billing, amongst others (Nova Scotia Office of Regulatory Affairs and Service Effectiveness, 2020). The end result of this survey offered policymakers 15 action items that are currently being used to reduce administrative burden and consequently burnout amongst physicians. As previously mentioned, the GROSS program has resulted in tangible outcomes surrounding administrative burden with the elimination of 58 percent of practices identified by the program and substantial savings in work hours (American Medical Association, 2020; Connelly et al, 2021). While the direct impact of these programs on occupational burnout has yet to be seen, the recognized association between workload and occupational burnout as found in the quantitative analysis warrants the effectiveness of this policy as being rated a **2/3**.

The implementation of a dual sided data collection initiative consisting of a national survey and key features of the GROSS program has the potential to come with a notable degree of administrative complexity. Successful implementation of such an

initiative involves buy-in, coordination and planning with a variety of key stakeholders including provincial governments, medical associations and health authorities. Additionally, regional disparities in EHR integration and structure could present an added layer of complexity when attempting to standardize practices from the GROSS model. While subsequent revisions and eliminations of administrative tasks may be burdensome as well, such burdens are likely to be short-term and result in more efficient practices moving forward. As a result, the administrative complexity of policy option 1 is recognized as being high and scores a **2/3**.

An initiative aimed at streamlining the administrative practices of the health care system is likely to be well-received by the general public. A national survey conducted in 2021 found that seven in ten (71 percent) Canadians believed the health care system too bureaucratic to be effective (Dallaire et al, 2021). As such, the implementation of policy option 1 can rationally be seen as an effort to streamline administrative and bureaucratic practices thereby aligning with this belief. As such, public support for policy option 1 is ranked as “high” and rated **3/3**.

Support for option 1 from health care workers is also expected to be relatively strong. As indicated previously, there is a common understanding within the health care field that a notable portion of administrative tasks are overly burdensome or unnecessary. As such, the implementation of policy option 1 would likely be received positively by health care workers as it would indicate action on the part of policymakers to reduce such burdens. Additionally, while the introduction of a survey and electronic feedback submission system could be viewed as adding an additional layer of administrative burden to an already overwhelmed workforce by professional associations and government agencies, this burden would likely be inconsequential when viewed in relation to the benefits of such a program. Streamlining administrative processes would likely lead to improved efficiency in service delivery and worker well-being that would ultimately improve outcomes for health organizations in the long-term. Thus, stakeholder support for policy option 1 is ranked as “high” and scored **3/3**.

It is difficult to precisely estimate the cost of a data collection initiative such as that proposed in policy option 1. Such costs will likely vary depending on the existing infrastructure in place within a particular province—particularly with regards to EHR adoption. However, research-oriented policies can generally be assumed to be less

financially burdensome than more tangible policy initiatives. Additionally, given that policy option 1 is intending to streamline administrative practices for health care workers and reduce time spent on unnecessary tasks, it is possible that the subsequent elimination of unnecessary practices will result in government savings due to increased efficiency. As a result, the cost for policy option 1 is considered “low” and scores a **3/3**.

6.2. Analysis of Option 2: Expand Scopes of Practice for Allied Health Care Workers

In a similar fashion to policy option 1, policy option 2 would not directly reduce burnout itself. However, by expanding the scopes of practice for allied health care workers, policy option 2 would likely result in the alleviation of some of the workload health care workers face in a relatively short amount of time. Research conducted in Saskatchewan found that minor ailment conditions treated by pharmacists improved the condition by 80.8 percent (Mansell et al, 2014). Additionally, studies have found expanded roles for paramedics in instances of “community paramedicine” to be generally effective in improving health outcomes and reducing the use of emergency services in various communities (Nolan et al, 2018). Similar research has emerged with regards to nurse practitioners, dentists and dental hygienists (Langelier et al, 2016; Drummond et al, 2022). As a result, policy option 2 scores a **3/3** in effectiveness.

Different allied health professions already have different scopes of practice depending on their provincial context (Canadian Institute for Health Information, 2020; Canadian Institute for Health Information, 2022; Canadian Pharmacists Association, 2023; Drummond et al, 2022). Thus, further expansion of a given role will be accompanied by varying degrees of administrative complexity. Additionally, expanding the roles of such professions would require engagement with various professional associations and colleges throughout each province. However, temporary role expansions such as those for pharmacists prescribing controlled substances during the COVID-19 pandemic have already established a precedent for the expansion of such roles (Canadian Pharmacists Association, 2023). While the administrative complexity of implementing such a policy would be onerous at initial stages, such burdens would likely be temporary and lessen as the policy becomes fully integrated by professional associations. The expansion of scopes of practice would also likely necessitate renegotiation in the payment agreements of various professional medical associations.

These negotiations would likely require administrative support from provincial health ministries, thereby adding an additional layer of administrative burden—albeit a minor one. Given this, the administrative complexity of option 2 is scored as **2/3**.

This policy option places no burden on the general public. Additionally, patients generally report increased satisfaction when receiving care from multi-disciplinary integrated health care teams (Petts et al, 2021; Liljas et al, 2019). Surveys have also indicated positive public reception to the expansion of roles such as nurse practitioners (Canadian Federation of Nurses Unions, 2018). Consequently, public acceptance for policy option 2 is scored as a **3/3**.

Stakeholder support for policy option 2 is likely to vary by health care profession. Given current strains on the health care system, alleviation of some workload via the expansion of allied scopes of practice would likely be positively received by core health care workers. Additionally, nurse practitioners and pharmacists have indicated dissatisfaction with their current scopes of practice or feelings of being underutilized in the health care system, indicating demand for expanded scopes of practice among such professions (Canadian Federation of Nurses Unions, 2018; Tannenbaum and Tsuyuki, 2014). However, allied health professionals who similarly feel symptoms of burnout or excess workload may be opposed to expanding their scopes in order to take on additional work. It should also be noted that certain professional associations such as those representing physicians, may not believe certain allied HCWs are capable of providing an adequate standard of care. Additionally, expanding the roles of allied HCWs could threaten the ability of certain core professions to bill for particular services such as prescription renewal, thereby undermining support. As such policy option 2 scores a **2/3** in stakeholder support.

As mentioned previously, expanding scopes of practice for allied health professionals will likely require renegotiation of payment agreements across all professions, thereby incurring moderate costs depending on province and profession. However, studies have found that the use of allied health care professionals is often a cost-effective policy alternative to the use of physicians or other core health care workers (Canadian Federation of Nurses Unions, 2018). Improved health outcomes and reduced rates of hospitalization that occur as a result of allied health care worker intervention indicate the expansion of such roles have the potential to notably reduce

health care spending and save money over time (Canadian Federation of Nurses Unions, 2018; Canadian Pharmacists Association, 2017; Langelier et al, 2016). As a result, while the implementation of policy option 2 would likely incur additional costs initially, financial benefits that occur as a result of improved health care access and health outcomes would likely offset these costs over time. Therefore, option 2 scores a **3/3** in cost.

6.3. Analysis of Option 3: Recognize and Integrate Community Health Workers into Broader Health and Social Services

Like policy option 2, policy option 3 would attempt to reduce occupational burnout amongst HCWs by expanding the health care workforce. Recognizing CHWs as a standard job classification in Canada would offer CHW services increased credibility and compensation (Najafizada et al, 2015). This has the potential to cause a greater number of Canadians—particularly from marginalized groups—to seek health care assistance and information from CHWs. Given the tendency for such communities to be underserved by the Canadian health care system, recognition of CHWs could alleviate additional workloads that arise from unnecessary or preventable instances of emergency care use by such populations (Najafizada et al, 2015). Furthermore, increases in compensation for CHWs would likely improve the performance and retention of workers in such occupations, resulting in improved health outcomes and reduced strain on the health care system as a whole. However, given the limited occupational data that exists regarding CHWs it is difficult to determine the size of the workforce that would be utilized as a result of option 3. Additionally, while CHWs can offer assistance to members of the general population, their more targeted focus on members of particular communities may narrow their impact. Given this speculation surrounding the broad impacts of CHWs, policy option 3 scores a **1.5/3** in effectiveness.

Recognizing and integrating CHWs into Canada's broader health care system will likely require a notable degree of administrative complexity. The recognition of CHWs as part of Canada's health workforce would likely require negotiations with relevant professional associations on a provincial basis in order to determine the services such an occupational category can provide as well as fee schedules and payment agreements for the occupation. Additionally, developing a standardized training

curriculum within each province would likely require additional administrative manpower facilitate collaboration between professional associations and the provinces. In light of these factors, policy option 3 scores a **1/3** in administrative complexity.

This policy option places no additional burden on the general public and offers to expand access to care for Canadians—particularly those in marginalized communities. Additionally, recent calls to address discrimination and systemic racism within Canada’s health care system would indicate widespread public support for this policy (Government of Canada Department of Finance, 2022; Registered Nurses Association of Ontario, 2022). This policy scores a **3/3** in public support.

This policy option also places no additional burden on the general health care worker population. Additionally, formally recognizing CHWs as a professional occupation would fulfill align with much of the advocacy work of organizations such as the Community Health Workers Network of Canada. The subsequent credibility and financial benefits gained from this recognition would likely be strongly supported by CHWs. However, in a similar fashion to option 2, certain core HCW professions could oppose the expansion of CHW roles as a result of questions relating to standards of care and billing practices. As such, this option scores a **2/3** in stakeholder support.

Akin to policy option 2, the use of CHWs is recognized as being a cost-effective alternative to core health care personnel. While CHW programs are not widespread within Canada, an analysis of a similar program in Vermont found the cost of a program staffed by three CHWs in a small, rural hospital to be 420,348 U.S. dollars (Mirambeau et al, 2013). Of this, CHW salaries and office space comprised major costs of the program (Mirambeau et al, 2013). Additionally, a study of CHWs in Nevada found the presence of such workers to reduce average medical costs from 1,223 to 983 dollars post-intervention (National Association of Community Health Workers, n.d.). As such, the implementation of policy option 3 would be relatively cheap, with the potential to reduce additional costs over time. As such, option 3 scores **3/3** in cost.

6.4. Analysis of Option 4: Mental Health Awareness and Educational Campaign

Recent literature suggests that mental health literacy and educational campaigns have the potential to make short-term improvements in mental health related knowledge and attitudes. This is shown to be particularly true in instances of educational campaigns that attempt to destigmatize mental illness by portraying sufferers as responsible, able to recover and live productive lives (Chapel, 2016). Research has shown mental health educational campaigns aimed at the general population to be an effective means of raising awareness of and destigmatizing the use of mental health resources. In 2010 the “Transforming Lives” campaign launched by the Centre for Addiction and Mental Health, was linked to sustained increases in visits to hospital psychiatric emergency departments both during and after the campaign concluded (Cheng, 2016). Additional studies have found xxx to correlate with higher rates of self-identification of mental health issues, seeking help for mental health concerns and reductions in perceived barriers to help-seeking (Wright et al, 2006). Additionally, the flexibility inherent to such a policy would allow it to target portions of the HCW population that were identified as particularly vulnerable to burnout via the quantitative analysis. This flexibility would also allow such a policy to emphasize practices that the quantitative analysis found to be particularly effective in reducing odds of job departure due to burnout. These factors viewed in conjunction indicate that the implementation of policy option 4 has the potential to significantly reduce levels of burnout amongst health care workers. As a result, policy option 4 scores **3/3** in effectiveness.

The implementation of a mental health awareness campaign would be accompanied by a moderate degree of administrative complexity. Coordinating the creation and dissemination of educational materials at a national scale would require a notable degree of engagement and cooperation with stakeholders. However, given that the policy specifically targets health care workers, the implementation would be less onerous than more widespread educational campaigns aimed at the general population. Furthermore, the creation and dissemination of educational materials can generally be viewed as less administratively complex than more substantive structural policy actions. Thus, policy option 4 is scored as a **2/3** in administrative complexity.

Given general sentiments surrounding the health care system, it is reasonable to suggest that public support for policy option 4 would be high. 53 percent of Canadians view hiring health care workers as the nation's top priority with regards to changing the current health care system (Nanos, 2022). Consequently, a policy aimed at reducing departure of current workers from the field via encouraging mental health awareness would likely receive a similar degree of support, assuming it was communicated effectively. Furthermore, educational campaigns are generally not burdensome for the general public. Therefore, public acceptance is scored as a **3/3**.

Support from health care workers for policy option 4 is projected to be less universal. High levels of burnout and other mental health concerns would indicate support for such a policy as a result of necessity. However, it is possible that the stigmatization of mental health within the health care worker population that the policy attempts to address could impede this support to a degree. Although, this impediment would likely be minimal. Additionally, the recognition of mental wellness and the need to address burnout by government agencies and professional associations indicates a reasonable level of support for such a policy resulting in option 4 receiving a **2/3** in stakeholder support.

Educational campaigns are generally recognized as being low-cost policy options. Costs can vary based on target population and the scope of the issue being addressed. For context, between 2019 and 2020 the Canadian government spent 4.51 million dollars on the COVID-19 public education campaign (Dencheva, 2023). Conversely, more targeted awareness campaigns such as the childhood vaccination campaign only cost 900,000 dollars (Dencheva, 2023). In this regard, a campaign targeting a population subgroup such as health care workers would likely be more akin to the second option. As a result, policy option 4 scores a **3/3** in cost.

6.5. Analysis of Option 5: Facilitate Interjurisdictional Virtual Care Registration for Physicians and Nurses

Facilitating virtual care registration and practice across jurisdictions has the potential to have a dual-sided impact on the reduction of occupational burnout. As indicated by the results of the quantitative analysis, health care workers who offered only virtual care services displayed reduced odds of job departure due to burnout. This, in

combination with additional research such as that conducted by Sullivan et al (2022) suggests that by offering additional avenues to shift to virtual care delivery, workers would have greater work flexibility and exhibit reduced levels of burnout. Additionally, by enabling qualified health care professionals to offer virtual services across jurisdictions, policy option 5 has the potential to alleviate some of the workload stresses that contribute to burnout in the first place. As a result, option 5 has the potential to be both a reactive and preventative means of reducing health care worker burnout and thus receives a **3/3** in effectiveness.

Administrative complexity is likely to be the most onerous component of policy option 5. The pandemic has seen the rapid expansion of virtual care infrastructure in all provinces and thus the necessary tangible structures are likely already in place to enable interjurisdictional practice. However, facilitating an interjurisdictional virtual care system will likely require substantial engagement and buy-in across provinces and health authorities. Health care has long been recognized as an area of provincial jurisdiction within Canada thereby resulting in a siloed system in which each province operates differently. As such, facilitating an interjurisdictional system as proposed in option 5 will require notable coordination and effort to navigate negotiations and devise a system that all parties will be satisfied with. Additionally, a revised billing system will need to be implemented in order to adapt to interjurisdictional practice. Currently, billing structures for health care professionals vary by province as well as between virtual and in-person care in some jurisdictions. Implementing option 5 will require some form of standardization with regards to how virtual services can be billed and what jurisdiction will be responsible for such costs. Thus, option 5 scores a **1/3** in administrative complexity.

Public support for policy option 5 is anticipated to be high. 9 in 10 Canadians have indicated satisfaction with virtual care services over the course of the pandemic, with a majority expressing interest in expanded virtual care services moving forward (Canada Health Infoway, 2021b). This, coupled with the expanded access to care that would likely result from option 5 sees option 5 score **3/3** in public support.

Stakeholder support for policy option 5 is anticipated to be similarly high. Following the pandemic, almost all Canadian physicians indicated that they would continue to use virtual care with 64 percent indicating that they would maintain or

increase their use. Additionally, 7 in 10 physicians were satisfied with telephone and video services, and roughly 50 percent were satisfied with email/messaging and remote monitoring services (Canada Health Infoway, 2021a). Additional statements from the Canadian Nurses Association and other professional associations suggest uptake of virtual care technologies to be viewed favorably amongst health care workers and advocacy groups (Canadian Nurses Association, n.d; Canadian Medical Association, 2020). Thus, option 5 scores **3/3** in stakeholder support.

The precise costs of facilitating interjurisdictional virtual care is difficult to determine and will likely vary based on the jurisdiction itself. However, research suggests that the use of virtual care itself is a cost-effective alternative to traditional care. Snoswell et al (2020) found that telehealth reduced overall costs to health care systems by preventing system-funded travel and negating the need for procedural or specialist follow-up as a result of efficient care delivery. Additionally, the federal government has emphasized the need to increase virtual care capacity in recent budgetary announcements, thereby offering potential support to alleviate costs incurred by this program (Government of Canada, 2022). Although costs to government might expand if patients that are currently without a family physician become better able to access regular care as a result of virtual tools. Of course, these costs would ultimately be necessary in order to alleviate the current strain on the health care system. As a result, option 5 scores **3/3** in cost.

Chapter 7.

Recommendations

Given the multifaceted nature of occupational burnout and its impact on the health care labour force, the response to such an issue warrants the use of multiple policy solutions to address excess workloads, staffing limitations and burnout itself. As a result, **this paper recommends a policy package consisting of options 1, 2, 4 and 5 to be implemented.** This combination of policy options will represent a multi-step approach to the issue of occupational burnout in the health care sector via a combination of short-, medium- and long-term solutions. All four options will likely offer complementary benefits that offset the associated drawbacks linked to each option, thereby resulting in effectiveness that is greater than the sum of its parts. Expanding scopes of practice for allied health workers, and the mental health awareness campaign are recommended to be implemented first as their low costs and moderate administrative complexity will likely facilitate faster implementation. Additionally, conducting a review of unnecessary administrative tasks in line with option 1 should also be conducted immediately, however the subsequent revision and elimination of such tasks will likely be more time consuming, resulting in lasting relief for health care workers but over the medium-term. Policy option 5 will likely be implemented last given the notable structural changes and engagement necessary to enact such a policy.

The strong association between occupational burnout and excessive workloads warrants a comprehensive review of administrative practices and burdens placed on health care workers. Initiatives such as the “Physician Administrative Burden Survey” and the GROSS program have been found to be an effective means of identifying inefficiencies in the health care system that contribute to and compound occupational burnout. Using these two initiatives as a model for option 1 will allow policymakers to conduct a review of unnecessary practices and systematically alter or remove tasks that are considered to have a negative impact on worker well-being. While this would not directly alleviate occupational burnout within the population, it will likely contribute to long-term benefits in worker mental health as a result of reduced workloads. Some additional advantages of this initiative include its relatively low administrative complexity and cost, as well as high levels of support from both the public and relevant

stakeholders. Of course, consideration must be given to the outreach and engagement necessary to enact such an initiative and the time the intervention will require as a result. While a general examination of the experiences of all health care workers is warranted, the findings of this research indicate specific focus should be given to the experiences of nurses and those working in acute care settings.

While such reviews and revisions are taking place, expanding the scopes of practice for allied health care workers would provide fast, meaningful relief to core health care workers who are experiencing burnout as a result of excessive workloads. Implementing such a policy would allow existing health care workers who are currently underutilized to take on additional work that is typically reserved for other health care professionals. Doing so would minimize skill duplication and overlap, thereby reducing inefficiencies and costs to the health care system overall. This would likely result in positive reception from the public and stakeholders on the whole, although allied health care workers who are already suffering from burnout may voice some opposition. Enacting this policy would likely incur some administrative complexity, such burdens would likely be temporary as health authorities take on such responsibilities moving forward.

Comprehensive mental health awareness programs have been shown to be effective in increasing engagement with existing mental health supports and normalizing mental wellness practices. Various models exist for this type of program throughout Canada and are commonly recognized as being cost-effective and well received by the general public. Multi-criteria analysis has shown this option to be the most well-rounded of those under examination, with notable obstacles being administrative complexity and stakeholder support although both are considered relatively minor. Additionally, emphasizing wellness practices such as engaging in exercise and ensuring adequate sleep have been shown to decrease individual's likelihood of experiencing burnout. Selectively targeting at-risk populations such as younger professionals, nurses and those working in acute care would also likely show increased returns on investment.

Lastly, implementing a system of interjurisdictional registration for virtual care practice would expand the staffing capabilities of each province, allowing workers from out of province to fill gaps in locum work. While this is likely the most administratively complex of the policy options due to the substantial stakeholder buy-in and structural

changes that will need to be made to billing systems, the projected effectiveness, lack of cost and support from stakeholders and the public likely warrant such an investment. The example set by the College of Registered Nurses of Alberta and the College of Registered Nurses of Saskatchewan can be used as a model for implementing this policy.

Policy option 1 should be initiated as soon as possible, pending acceptance by relevant stakeholders, given its moderate effectiveness and low cost. The high levels of public and stakeholder support for such a policy will likely aid in its uptake from professional associations and health authorities thereby allowing data to begin being collected relatively quickly. While this data collection will likely take time to complete and act on, additional policies such as the implementation of a targeted mental health awareness campaign and expanding scopes of practice for allied health care workers will offer health care workers more immediate assistance both in the form of direct mental health support and alleviation of excessive workloads. This will offer short-term relief while more systematic reforms take place as a result of policy option 1. Lastly, creating a structure for interjurisdictional virtual care delivery will likely take substantial time and effort to realize, with substantial administrative complexity and buy-in necessary from stakeholders. However, once such a policy is implemented health care workers will be able to assist each other across provincial boundaries through low-stress, high-flexibility work that reduces likelihood of burnout as well as redistributes burdensome workloads. As such, using these policies in conjunction with one another will theoretically combat the issue of occupational burnout from multiple angles, both reactively and proactively.

Chapter 8.

Conclusion

Occupational burnout is a substantial contributor to the health care worker shortage within Canada. This contribution presents a real and pressing threat to the health and well-being of health care workers as well as Canadians as a whole both directly via negative health outcomes and indirectly via reduced access to care and deficiencies in medical care services. This research has demonstrated the need for substantial and comprehensive policy intervention in order to address occupational burnout both directly and indirectly. The findings of the quantitative analysis indicate that occupational burnout is extensive amongst the health care worker population, with younger professionals, men, nurses, and those working in acute care more likely to report burnout as a key reason for departing their current job. Additionally, burnout appears to be a ubiquitous concern for health care workers across all provinces save for Quebec and Manitoba, although existing literature does not corroborate this. Lastly, increased workload seemed to be the greatest predictor of job departure due to occupational burnout, while wellness practices such as exercise and adequate sleep as well as the presence of professional emotional supports resulted in reduced likelihood for job departure due to burnout. Thus, policy interventions should aim to address occupational burnout by targeting these vulnerable groups as well as alleviating workloads and encouraging such positive behaviours.

The policy interventions recommended as a result of this research consist of a multi-pronged approach aimed at addressing burnout directly as well as indirectly via reducing workloads for health care workers and improving staffing capacity. This package consists of revision of medical administrative practices, expanding scopes of practice for allied health workers, initiating a mental health awareness campaign to facilitate engagement with existing mental health supports and the facilitation of interjurisdictional virtual care delivery to reduce gaps in staffing capacity. The policy problem of occupational burnout is broad in scope and requires diverse set of interventions such as this in order to be addressed effectively. Coordination between provincial governments and the federal government as well as relevant professional associations and stakeholders is necessary in order to facilitate the implementation of

the policies recommended in this paper. Additionally, while many of these policies will incur some costs, the resulting reduction in inefficiencies and expanded access to the health care system will likely work to save health care costs over time.

Further research regarding occupational burnout within the health care worker population should further explore relationships identified in this paper such as delivery of virtual care services, occupation, and job setting in order to determine if such relationships could be statistically significant. Of particular interest is the relationship between health care workers operating in Quebec and reduced odds of job departure due to burnout. Relevant literature does not indicate Quebec being an exception to the presence of burnout amongst its health care workers, however conducting a jurisdictional scan of the region could yield some useful policy tools that can be implemented elsewhere in the country. Additionally, survey questionnaires should be designed that measure burnout and contributing factors more directly. Asking health workers directly what factors drive this syndrome will likely provide additional depth of understanding of the issue as well as reveal more direct policy mechanisms that can be used to address it. Lastly, future analysis of this issue should attempt to incorporate not only quantitative methods but also more qualitative components such as expert interviews in order to offer greater depth into major trends or concerns as well as opportunities for reform that may be overlooked by policymakers less familiar with the field.

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Appendix A.

2021 SHCWEP Questions and Response

Variable	SHCWEP Question Code	Question/Response
Age	AGEDVGRP	Derived from DHH_AGE. Age group of respondents in increments of 10. 1. 18 to 34 years 2. 35 to 44 years 3. 45 to 54 years 4. 55 years or older 9. Not stated (NS)
Sex	GDR_Q10	What is your gender? 1. Male 2. Female 3. Please specify
Service delivery	ENV_Q25	Since March 2020, how did you provide health care services to patients or clients at your primary job location? 1. Over the phone 2. Video meeting 3. Email, text or instant messaging 4. In-person 5. Other 6. Did not provide health care services to patients or clients
Burnout	JI_Q05	How long are you planning to stay in your current job? 1. Less than 6 months 2. 6 months to less than a year 3. 1 to 2 years 4. 3 to 5 years 5. 6 or more years

Variable	SHCWEP Question Code	Question/Response
Burnout	JI_Q10	What are the reasons that you might consider leaving or changing your job? 1. Retiring 2. Job stress or burnout 3. Lack of job satisfaction 4. Concerns about your physical health and safety 5. Concerns about your mental health and well-being 6. Concerns about the physical and mental health of household members or others close to you 7. Financial impacts or concerns 8. Long-term impacts of COVID-19 on health care system, including changes in method of delivery of health care 9. Other career opportunity 10. Other
Income	THI_01	What is your best estimate of your total household income received by all household members, from all sources, before taxes and deductions, during the year ending December 31, 2020? Rounded to the nearest CAN\$
Income	THIDVGRP	Derived from THI_01 1. Under \$100,000 2. \$100,000 to \$149,000 3. \$150,000 or more 9. NS
Job setting	ENVVGTY	Type of job setting - grouped 1. Acute care 2. Long-term care 3. Outpatient and ambulatory care 4. Community/home care 5. Other 99. NS
Province of work	ENV_Q20	What is/was the province or territory of your primary job location? 1. Alberta 2. British Columbia 3. Manitoba 4. New Brunswick 5. Newfoundland and Labrador 6. Northwest Territories 7. Nova Scotia 8. Nunavut 9. Ontario 10. Prince Edward Island 11. Quebec 12. Saskatchewan 13. Yukon

Variable	SHCWEP Question Code	Question/Response
Professional emotional support	PPE_40F	<p>Please indicate to what extent you agree or disagree with each statement.</p> <p><i>Professional emotional support (e.g. counselling) was available to those who needed help.</i></p> <ol style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree 6. N/A 96. Valid Skip 99. NS
Workload	ICJ_Q05	<p>Did you experience any of the following during the COVID-19 pandemic?</p> <p>Would you say:</p> <ol style="list-style-type: none"> 1. There was more conflict among colleagues at work 2. There was more conflict between employees and management 3. Felt more stressed at work 4. Had to do work that normally you don't do 5. Had an increased workload 6. Had to work overtime or additional hours beyond regular schedule 7. Had reduced hours 8. Was laid off (either permanently or temporarily) 9. Had a loss of income 10. Had an increase in income 11. Had to take unpaid leave (e.g., sick leave, leave to care for a family member) 12. Was refused vacation or leave 13. Had to change method of delivery of health care (e.g., partially or fully transitioned to video or telephone patient care) 14. Did not experience any of the above
Household members	HHCDVGRP	<p>Number of household members-grouped</p> <ol style="list-style-type: none"> 1. One person household 2. Household has 2 people 3. Household has 3. People 4. Household has 4 or more people 9. NS

Variable	SHCWEP Question Code	Question/Response
Communication friends, family, peers; Communication: health professional; Communication: social media; Meditation/spiritual guidance; Exercise; Adequate sleep; Hobbies	BH_Q35	Are you currently doing any of the following activities to maintain or improve your health? By health we mean not only the absence of disease or injury but also physical, mental and social well-being. 1. Communicating with friends/family, peers 2. Communicating with health professionals (e.g. seeking treatment from a counsellor or therapist) 3. Communicating through social media 4. Meditating or seeking spiritual guidance 5. Exercising 6. Participating in hobbies (e.g. gardening, journaling or crafts) 7. Ensuring adequate sleep (e.g. avoiding screen time before sleep, avoiding caffeinated drinks or maintaining regular sleep cycle). 8. Other 9. None of the above
Immigrant status	IMMDVGST	Immigration status- grouped 1. Non-immigrant 2. Immigrant or permanent resident 9. NS
Occupation	OCCDVGLO	National occupation classification- 4 groups 1. Physicians 2. Nurses 3. Personal support workers or care aides 4. Other

Appendix B.

Raw Logistic Regression Outputs

Table B1: Outputs for intent to leave current job due to burnout.

Deviance Residuals:

Min	1Q	Median	3Q	Max
-2.2529	-0.8450	0.3650	0.8513	2.5727

Coefficients:

	Estimate	Std. Error	Z value	Pr(> z)
(Intercept)	0.25196	0.68928	0.366	0.714706
Virtual care only	-0.58336	0.40642	-1.435	0.151188
Age	-1.19906	0.15074	-7.54	1.80e-15***
Sex	0.13259	0.23136	0.573	0.566599
Income	0.07735	0.16158	0.479	0.632165
Professional emotional support	-1.04632	0.13920	-7.517	5.62e-14***
Job Setting				
Acute	0.11486	0.26398	0.435	0.663487
Community	-0.24785	0.36785	-0.674	0.200453
Outpatient	-0.08856	0.27716	-0.320	0.749327
Long-term	-0.25228	0.32294	-0.781	0.43467
Province of work				
Quebec	-0.55624	0.28333	-1.963	0.049622 *
Alberta	0.40088	0.27821	1.441	0.149597
Manitoba	-0.26638	0.28214	-0.944	0.345098
Ontario	0.14522	0.26719	0.544	0.586769
Atlantic provinces	0.05137	0.23284	0.221	0.825378

Saskatchewan	0.16769	0.29016	0.578	0.563314
# Household members	0.09084	0.07494	1.212	0.225430
Communication:				
Communication: Friends, Family, Peers	0.16849	0.25879	0.651	0.514987
Communication: health professional	0.37788	0.14875	2.540	0.011073 *
Communication: social media	-0.23795	0.14182	-1.678	0.093365 .
Immigrant status	-0.10510	0.22143	-0.475	0.635037
Meditation/Spiritual guidance	0.20446	0.15443	1.324	0.185527
Exercise	-0.54235	0.15428	-3.515	0.000439 ***
Hobbies	0.08656	0.14827	0.584	0.559347
Adequate sleep	-0.34507	0.14737	-2.342	0.019206 *
Occupation:				
Nurse	0.08671	0.20616	0.421	0.674039
Physician	-0.31592	0.27281	-1.158	0.246843
Personal support	-0.15337	0.28659	-0.535	0.592550
Increased workload	1.06250	0.16319	6.511	7.47e-11 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

Null deviance: 1764.5 on 1272 degrees of freedom

Residual deviance: 1390.6 on 1244 degrees of freedom

AIC: 1418.7

Number of Fisher Scoring iterations: 4

Table B2: Adjusted odds ratios for multivariate logistic regression

	Odds Ratio
(Intercept)	1.287
Service delivery (Virtual care only vs. other service delivery)	0.558
Age (55 or older vs. under 55)	0.301***
Sex (Male vs. Female)	1.142
Income (Under \$100,000 vs. \$100,000 or more)	1.080
Professional emotional support (No support offered vs. support offered)	0.351***
Job setting: Acute	1.122
Job setting: Community	0.780
Job setting: Outpatient	0.915
Job setting: Long-term	0.777
Province of work: Quebec	0.573**
Province of work: Alberta	1.493
Province of work: Manitoba	0.766
Province of work: Ontario	1.156
Province of work: Atlantic provinces	1.053
Province of work: Saskatchewan	1.183
Household members	1.095
Communication: friends, family, peers (Yes vs. no)	1.184
Communication: health professional (Yes vs. no)	1.459**
Communication: social media (Yes vs. no)	0.788*
Immigrant status	0.900
Meditation/Spiritual guidance (Yes vs. no)	1.227
Exercise (Yes vs. no)	0.581***
Hobbies (Yes vs. no)	1.090
Adequate sleep (Yes vs. no)	0.708**
Occupation: Nurse	1.091
Occupation: Physician	0.729
Occupation: Personal support	0.858
Increased workload (Yes vs. no)	2.894***

Table B3: Standard Errors for Multivariate Logistic Regression

	Std. Error
(Intercept)	0.689
Service delivery (Virtual care only vs. other service delivery)	0.406
Age (55 years or older vs. under 55)	0.151
Sex (Male vs. Female)	0.231
Income (Under \$100,000 vs. \$100,000 or more)	0.162
Professional emotional support (No support offered vs. support offered)	0.139
Job setting: Acute	0.264
Job setting: Community	0.368
Job setting: Outpatient	0.277
Job setting: Long-term	0.323
Province of work: Quebec	0.283
Province of work: Alberta	0.278
Province of work: Manitoba	0.282
Province of work: Ontario	0.267
Province of work: Atlantic provinces	0.233
Province of work: Saskatchewan	0.290
Household members	0.075
Communication: friends, family, peers (Yes vs. no)	0.259
Communication: health professional (Yes vs. no)	0.149
Communication: social media (Yes vs. no)	0.142
Immigrant status	0.221
Meditation/Spiritual guidance (Yes vs. no)	0.154
Exercise (Yes vs. no)	0.154
Hobbies (Yes vs. no)	0.148
Adequate sleep (Yes vs. no)	0.147
Occupation: Nurse	0.206
Occupation: Physician	0.273
Occupation: Personal support	0.287
Increased workload (Yes vs. no)	0.163

Appendix C.

Additional Tables

Table C1: Policy Criteria and Measures

Criteria	Measure	Index
Effectiveness (x2)	The impact a policy will have on reducing levels of burnout amongst healthcare workers	1- little to no reduction in levels of burnout 2- moderate reduction in levels of burnout 3- significant reduction in levels of burnout
Administrative complexity	The extent of the administrative burden imposed on policymakers and implementers by a policy via the creation of new structures, mechanisms or practices	1- High complexity 2- Moderate complexity 3- Low complexity
Public support	Support for a policy from members of the general public	1- Low support 2- Moderate support 3- High support
Stakeholder support	Support for a policy from health care workers	1- Low support 2- Moderate support 3- High support
Cost	Estimated costs to government associated with direct funding, materials, resources and infrastructure	1 – High cost 2 – Moderate 3 – Low cost

Table C2: Summary of Policy Evaluation

Criteria	Streamlining or Elimination of Select Administrative Forms and Practices	Expand Scopes of Practice for Allied Health Care Workers	Recognize and Integrate Community Health Workers into Broader Health and Social Services	Mental Health Awareness and Educational Campaign	Facilitate Interjurisdictional Virtual Care Registration for Physicians and Nurses
Effectiveness /3(x2)	Moderate reduction in levels of burnout (2)	Significant reduction in levels of burnout (3)	Little to moderate reduction in levels of burnout (1.5)	Significant reduction in levels of burnout (3)	Significant reduction in levels of burnout (3)
Administrative Complexity /3	Moderate complexity (2)	Moderate complexity (2)	High complexity (1)	Moderate complexity (2)	High complexity (1)
Public Support /3	High support (3)	High support (3)	High support (3)	High support (3)	High support (3)
Stakeholder Support /3	High support (3)	Moderate support (2)	Moderate support (2)	Moderate support (2)	High support (3)
Cost /3	Low cost (3)	Low cost (3)	Low cost (3)	Low cost (3)	Low cost (3)
Total /18	15	16	12	16	16