Thematic Literature Analysis

Development of the Canadian National Plan for Health Workforce Well-being

August 29, 2024

FINAL

PREPARED FOR:

Royal College of Physicians and Surgeons of Canada

PREPARED BY:

DPRA Canada Inc.
1 Yonge Street, Suite 1203
Toronto, ON M5E 1E5
416-945-9904
www.dpra.ca

Table of Contents

List of Acronyms

CAHS..... Canadian Academy of Health Sciences
CIHI ..... Canadian Institute for Health Information
CMA..... Canadian Medical Association
COVID-19 ... SARS-CoV-2
ECHO ..... Extension of Community Health Outcomes
IT ..... Information Technology
MCAT ..... Medical College Admission Test
NAM..... National Academy of Medicine
NPHWW ..... National Plan for Health Workforce Well-Being
OUSSG..... Office of the U.S. Surgeon General
UNDRIP..... United Nations Declaration on the Rights of Indigenous Peoples
TRC ..... Truth and Reconciliation Commission of Canada
WIFI ..... Wireless Fidelity

Executive Summary

Background

The Royal College of Physicians and Surgeons of Canada (Royal College) has received a $3.5 million grant from Health Canada to work with partners to develop and evaluate a National Plan for Health Workforce Well-Being (NPHWW). An environmental scan of the best available evidence to support the development of this NPHWW was completed and is presented in this report as a thematic analysis of the literature.

Purpose

The purpose of this thematic analysis of literature was to consolidate the evidence with reference to the six priority areas that have been identified for the NPHWW in order to validate that the strategic priorities were relevant and appropriate within the Canadian context, identify the key themes in the evidence to support the development of action plans for each priority, and conduct an analysis of the key strengths, weaknesses, and gaps in the available evidence for each priority area and discuss its relevance and application to the NPHWW.

Results

A comprehensive analysis of 108 articles examined evidence related to health workforce burnout. The findings were categorized according to priority areas to reveal the key factors contributing to burnout, effective strategies for addressing these factors, and gaps and limitations in the current research to provide a clear understanding of the health workforce burnout landscape and highlight opportunities for further investigation and intervention.

Implications for the NPHWW

The review supported the strategic priorities identified for the NPHWW, and proposes the following adjustments to three priorities:

- Redefined "Institutionalize and Invest in Well-Being as a Long-Term Value" to focus on issues that affect the resilience of the health system now and into the future.
- Redefined “Create and Sustain Positive Work and Learning Environments" to emphasize the influence of organizations and culture on the individual and interpersonal aspects of well-being.
- Renamed "Invest in Measurement, Assessment, Strategies and Research" to "Invest in Measurement, Assessment and Research" to avoid redundancy with the strategies presented in all priority areas.

The review identified four cross-cutting themes that offer important consideration for all six priority areas, which include:

- Using adaptive and developmental evaluation approaches to address evidence limitations.
- Establishing metrics and goals to prioritize well-being.
- Favoring organization-directed interventions over individual-directed approaches.

- Integrating diverse leadership to increase representation and address systemic barriers.

This comprehensive analysis aims to support the development of a more effective and contextually appropriate plan for improving health workforce well-being in Canada, addressing both immediate needs and the long-term sustainability of the health system.

1. Introduction

The Royal College of Physicians and Surgeons of Canada (Royal College) has received a $3.5 million grant from Health Canada to work with partners to develop and evaluate a National Plan for Health Workforce Well-Being (NPHWW). The NPHWW will focus on improving health workforce conditions and influencing culture to reduce burnout, minimize administrative burden, and recruit and retain a diverse, inclusive workforce to meet Canadians' current and future healthcare needs.

The project builds upon a similar initiative in the United States led by the National Academies of Medicine (National Academies of Medicine (NAM), 2024a). The Royal College project will explore six priority areas identified through that initiative:

1. Create and sustain positive work and learning environments and culture.
2. Invest in measurement, assessment, strategies, and research.
3. Support mental health and reduce stigma.
4. Engage effective resources to minimize administrative burden.
5. Institutionalize and invest in well-being as a long-term value.
6. Recruit and retain a diverse and inclusive health workforce focused on meeting current and future needs.

The Royal College hired DPRA Canada Inc. to conduct an environmental scan of the best available evidence to support the development of the NPHWW. The environmental scan includes an annotated bibliography and a thematic analysis of peer-reviewed and grey literature. The following report presents the findings of the environmental scan.

2. Purpose and Scope

The purpose of this thematic analysis of literature was to consolidate the evidence with reference to the six priority areas that have been identified for the NPHWW in order to:

- Validate that the strategic priorities were relevant and appropriate within the Canadian context.
- Identify the key themes in the evidence to support the development of action plans for each priority.
- Conduct an analysis of the key strengths, weaknesses, and gaps in the available evidence for each priority and discuss its relevance and application to the NPHWW.

3. Methodology

3.1 Search Strategy and Results

This thematic literature review presents a synthesis and analysis of the literature included in an environmental scan of the grey and peer-reviewed literature related to the six identified priority areas for the NPHWW. The selected articles discuss health workforce well-being from systemic, organizational, and, where possible, Canadian perspectives. The articles were identified through searches of Canadian health organization websites and academic databases and provided by leaders involved in the development of the NPHWW.

The evidence included in this review was critically appraised to determine whether the findings were reliable, meaningful, and applicable to the development of the NPHWW. The critical appraisal results can be found in the companion annotated bibliography report (DPRA, 2024).

In total, 108 articles were included in this review, representing the following types of health evidence:

- 34 Expert opinion articles
- 19 Analytical cross-sectional studies
- 20 Policy documents
- 14 Systematic reviews
- 8 Descriptive cross-sectional studies
- 10 Qualitative studies
- 3 Cohort studies

3.2 Approach to Synthesis and Analysis

Full-text articles were imported to NVivo and coded through an inductive process to assess their relevance and applicability to the NPHWW priority areas. The key findings, strengths, weaknesses, and gaps in the evidence supported the development of themes within each priority area. These themes highlight the prevalence of key issues, their influencing factors, and strategies for improvement, thereby informing actionable recommendations for the NPHWW.

The findings are organized according to the identified priority areas, which are intended to address well-being across Canada's healthcare systems. The priority areas are defined as follows.

- **Create and sustain positive work and learning environments and culture.** Transform health organizations, health education and health care training by prioritizing and investing in efforts to optimize environments that prevent and reduce burnout, foster professional well-being, and support quality care.
- **Support mental health and reduce stigma.** Provide support to health workers by eliminating barriers and reducing the stigma associated with seeking services needed to address mental health challenges.

- **Engage effective resources to minimize administrative burden.** Invest in staffing and human resources to alleviate the administrative burden placed on physicians, nurses (including nurse practitioners), and other members of health care teams, increasing the amount of time available for patient care. Optimize and expand the use of health information technologies that support health workers in providing high-quality patient care and serving population health, and minimize daily requirements, such as documentation, that inhibit clinical decision-making or add to administrative burden.
- **Institutionalize and invest in well-being as a long-term value**. Address systemic issues that inhibit worker well-being to create sustainable public health and health systems that are resilient and responsive now and into the future**.**
- **Recruit and retain a diverse and inclusive health workforce focused on meeting current and future needs.** Promote careers in the health professions and enable healthy work environments that promote inclusiveness, diversity, equity, accessibility, and a thriving workforce.
- **Invest in measurement, assessment, and research.** Determine the most effective measurement and assessment tools for health workforce well-being, burnout, and related metrics. Identify key areas of focus for future research to address gaps in knowledge about well-being and burnout.

4. Results

4.1 Overview of Health Workforce Well-being in Canada

The well-being of the health workforce in Canada has become an increasingly critical concern, reflecting both long-standing challenges and the profound impact of the COVID-19 (SARS-CoV-2) pandemic (Casey, 2023; Canadian Academy of Health Sciences (CAHS), 2023; Canadian et al. (CMA), 2018; CMA, 2022; Canadian Institute of Health (CIHI), 2023). Canada's healthcare system faced significant shortages across various professions for decades before the pandemic, with gaps in the availability of dentists, medical lab professionals, occupational therapists, speech-language pathologists, audiologists, and numerous other allied health professionals (Casey, 2023). Furthermore, nearly a third of physicians and nurses experienced significant symptoms of burnout, depression, and anxiety as early as 2019 (Casey, 2023). The COVID-19 pandemic exacerbated these deficiencies, pushing many healthcare workers to experience burnout.

A 2018 national survey of physicians showed that 82% felt resilient, and 87% felt psychologically healthy (CMA, 2018). However, by 2021, half of the physicians surveyed reported experiencing burnout – a sharp increase from pre-pandemic levels (CMA, 2022; Casey, 2023). Rising anxiety, depression, and suicidal ideation among healthcare professionals have led many physicians to consider reducing their clinical hours in the near future (CMA, 2022; Statistics Canada, 2022). Similar trends were observed in the United States.

Similar patterns of increased burnout and stress have been observed among other healthcare Canadian health practitioners following the pandemic (Statistics Canada, 2022; CIHI, 2024b) and in the United States (NAM, 2019; Mata et al., 2015; White et al., 2023). In a Statistics Canada study (2022), 92% of nurses, 83.7% of physicians and 83% of personal support workers and care aids reported feeling more stressed at work as a result of the pandemic.

At an individual level, healthcare workers who experience burnout may experience occupational injuries, problematic alcohol use, an increased risk of suicide, and lower rates of work-life satisfaction (NAM, 2019; Olson, 2017). Learners working toward careers in healthcare may experience career regret and sub-optimal professional development as a consequence of burnout (NAM, 2019).

Well-being *is a positive state experienced by individuals, encompassing quality of life and the ability to contribute to the world with a sense of meaning and purpose.*

Burnout *is a syndrome resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions:*

1. *High emotional exhaustion or feelings of energy depletion.*
2. *Increased mental distances from one's job, or feelings of negativism or cynicism related to one's job.*
3. *A low sense of personal accomplishment or a sense of ineffectiveness.*

(World Health Organization (WHO), 2022a)

At the organizational level, burnout is the factor most strongly related to physicians' plans to withdraw from the clinical workforce (Sinksy & Panzer, 2022). In Canada, 24% of nurses reported intentions to leave their jobs following the pandemic – more than any other health occupation (Statistics Canada, 2022). In the United States, about half of nurses and 20% of doctors reported plans to leave their clinical practice (Shanafelt et al., 2020), and shortages of more than 1 million nurses were projected by the end of 2022 (Murthy, 2022).

The effect of burnout extends to the quality of the health system to support the health of Canadians. It threatens to exacerbate the lack of access to primary care, where a quarter of Canadians are without a primary care provider (OurCare, 2023; 2024), affects patient safety by increasing the risk of medical errors (West et al., 2009), and threatens the sustainability of the healthcare system as workforce retention becomes increasingly difficult (Duong & Vogel, 2023; Health Canada, 2022; Statistics Canada, 2022), and vacancies increase (CIHI, 2024a; CIHI, 2024b).

4.2 Positive Work and Learning Environments and Culture

Transform health organizations, health education and health care training by prioritizing and investing in efforts to optimize environments that prevent and reduce burnout, foster professional well-being, and support quality care.

This section analyzes 25 sources to explain the interpersonal and organizational factors that influence the working and learning environment of healthcare workers. It also provides specific strategies that have been proven to enhance these factors and discusses the gaps and limitations of the available evidence.

4.2.1 Factors that Shape Work and Learning Environments

Positive work and learning environments are shaped by the individuals, relationships and structures within healthcare organizations and learning institutions. Positive work and learning environments and culture are key to addressing the costs associated with staff turnover, lost revenue, financial risk, and threats to a health system's long-term viability (Shanafelt et al., 2017).

Leadership Styles

While positive, supportive leadership healthcare settings enhance the well-being and satisfaction of healthcare practitioners (Compton et al., 2021; Karniel-Miller et al., 2010), the reverse is also true. Negative leadership styles have detrimental effects on work environments. Negative leadership styles include behaviours such as poor treatment of others, abusive or authoritarian styles, having unreasonable expectations of others, and laissez-faire leaders who avoid their responsibilities (Dextras-Gauthier et al., 2023). Research has shown that healthcare workers who have supervisors with negative leadership styles report higher levels of stress, poorer mental health, higher burnout, higher levels of emotional exhaustion and are more likely to state that they have an intention to leave their organization (CAHS, 2023; Niinihuhta & Haggman-Laitila, 2022).

Disrespectful Behaviour

Incidences of disrespectful behaviour often result in negative consequences for both healthcare workers and organizations. Leape and colleagues (2012) identify six categories that constitute disrespectful behaviour in healthcare settings: disruptive behaviour, humiliating and demeaning treatment of others, passive-aggressive behaviour, passive disrespect, the dismissive treatment of others, and systemic disrespect. Disrespectful behaviour ranges in magnitude from not adhering to rules of common courtesy to being insensitive to violating others' emotional and physical needs (Karnieli-Miller et al., 2010). Disrespectful behaviour of any type inhibits collegiality, cooperation, communication, and compliance with and implementation of new practices (Leape et al., 2012). Ultimately, repeated incidences of disrespectful behaviour undermine morale and result in tension amongst staff.

Perfectionism

Increasingly, physicians recognize and acknowledge that perfectionism and self-criticism can be harmful (Shanafelt, 2021). While perfectionism is often lauded as a desirable trait, representing diligence, tenacity, and goal attainment (Gaudreau et al., 2022), more recent research suggests that the many associated psychological costs of perfectionism outweigh the potentially small benefits (Gaudreau et al., 2022). Individuals who strive for perfection experience elevated doubts, concerns about their self-worth, irrational beliefs about themselves and the world, self-presentation concerns, and perceived pressure (Razzetti, 2019). They are also more likely to operate under a sense of personal and social obligations and to be chronically unsatisfied (Gaudreau et al., 2022).

Unfortunately, perfectionism is widespread in healthcare settings. Eley and colleagues (2022) found that many students begin medical school with perfectionistic mindsets, which often result from comparison to and competitiveness with others. This is a concern for medical educators because students are entering an environment (e.g., medical school, hospitals) that may exacerbate this distress, possibly to the point of developing more serious psychological problems (Gaudreau et al., 2022).

Unsafe Work Environments

Work environments can be both physically and psychologically unsafe, which has significant implications for work and learning environments and healthcare worker well-being. According to National Nurses United (as cited in Murthy, 2022), eight in 10 health workers reported having been subjected to physical or verbal abuse during the pandemic. Healthcare workers should be able to work in physically safe environments to ensure their well-being, prevent injury, and permit them to provide the highest quality of patient care.

Psychological safety is the belief that it is okay to take risks in work and learning environments, like sharing ideas or admitting mistakes, without fear of negative consequences to self, status, or career (Torralba et al., 2016). This could include expressing yourself, acting authentically, sharing concerns, and identifying mistakes, all without the fear of embarrassment, ridicule or shame (Torralba et al., 2016; Torralba et al., 2020). Psychological safety has been linked to important outcomes in the health workforce, such as greater job satisfaction, worker retention and less turnover of the existing health workforce, improved patient outcomes, increased work engagements, quality improvement, error reporting, team learning (Edmondson, 1999), resident satisfaction with their clinical learning experience (Torralba et al., 2016), a strong sense of belonging and increased innovation (Siad & Rabi, 2021). When

employees do not feel psychologically safe, several adverse outcomes can occur, including turnover, stress, less innovation, lower job satisfaction, and poorer team dynamics (Edmondson, 1999).

4.2.2 Strategies for Creating Positive Work and Learning Environments and Culture

Establish Supportive Leadership

Leaders should prioritize and take intentional steps to cultivate a supportive organizational culture. A positive culture within an organization has a significant impact on psychological health, which in turn encourages leadership behaviours that are constructive and beneficial to employees, leading to higher productivity, satisfaction, creativity, and improved patient care (Dextras-Gauthier et al., 2023; Do et al., 2023). This is especially true during periods of crisis, like the COVID-19 pandemic (Mackay et al., 2022). When leaders fail to actively enhance their work environment, it is essential to hold them accountable (NAM, 2019). To achieve this, organizations must allocate appropriate resources to support accountability efforts, including dedicated teams, processes, and systems for documenting, analyzing, and communicating issues (Sokol-Hessner et al., 2018). Leaders should also consistently model respectful behaviour in all clinical and educational contexts (Dyrbye et al., 2020). This includes larger initiatives, such as sharing stories and data about respect, as well as smaller actions, like offering apologies and asking for permission (Karnieli-Miller et al., 2010; Sokol-Hessner et al., 2018).

Counteract Perfectionism

There are several ways to discourage perfectionism in healthcare organizations. One effective approach is to promote "excellencism" as a constructive alternative. Excellencism focuses on striving for high yet achievable standards with diligence, determination, and flexibility. This approach has been shown to yield positive short-term developmental outcomes for university students without the harmful effects linked to perfectionism (Gaudreau et al., 2022). In medical education, it is important to appropriately challenge students while providing them with the necessary support, nurturing, and clear expectations to prevent the development of perfectionistic tendencies (Eley et al., 2022). Additionally, to help address perfectionism among teams of healthcare professionals, fostering connections and a sense of community is recommended. This can be achieved through sharing experiences, offering mutual support, and showing attentive care for one another (Shanafelt, 2021).

Promote Psychological Safety

Psychological safety can be promoted by:

- Selecting leaders who understand and embody qualities of respect and dignity will help them naturally model respectful behaviour (Sokol-Hessner et al., 2018).
- Encouraging participation and input, emphasizing the purpose of their subordinates' work, creating shared expectations and meaning, thanking and crediting others when they offer ideas, asking questions, inviting input, and responding supportively (Siad & Rabi, 2021; Torralba et al., 2016).
- Cultivating nonpunitive and empowering working environments that encourage learners and workers to ask questions, admit mistakes, report errors, offer support, and destigmatize failures (Torralba et al., 2016; Torralba et al., 2020).

- Implementing strategies to improve equity including the targeted recruitment of equity-deserving workers, adopting anti-oppressive standards of practice and codes of conduct, training in implicit bias and bystander intervention, developing competency in health equity and utilizing restorative justice models of accountability (Siad & Rabi, 2021).
- Establishing procedures to analyze incidents, considering the systemic factors that contributed to the incident in addition to individual actions (Sokol-Hessner et al., 2018).

Establish Organizational Policies that Entrench Respect and Safety

By adopting organizational policies that address both physical and mental safety, healthcare organizations can create an environment where respect and dignity are ingrained in the culture, leading to better outcomes for both staff and patients.

Leadership within healthcare organizations should actively promote respect and dignity as fundamental values. This can be achieved by emphasizing respect in the organization's code of conduct and integrating this responsibility into job descriptions, onboarding processes, performance reviews and promotions (Sokol-Hessner et al., 2018). Additionally, leaders should be trained to hold entitled, bullying, or abusive staff accountable and, when necessary, remove repeat offenders (Shapiro et al., 2019). Medical schools also play a crucial role in this effort by unequivocally supporting and being accountable for zero-tolerance harassment and mistreatment policies (Do et al., 2023).

Fostering a culture of respect and dignity requires clear communication policies, particularly in response to adverse events. Organizations should implement procedures for communication, apology, and reconciliation, ensuring ongoing support for patients and families who have experienced harm (Sokol-Hessner et al., 2018). By addressing these issues transparently and compassionately, healthcare organizations can rebuild trust and demonstrate their commitment to respect as a core value. Likewise, creating patient rights and responsibilities charters that protect staff from abuse and establishing procedures to address incidents of patient harassment are crucial steps in maintaining a mutually respectful and safe environment.

Finally, training staff in de-escalation techniques and embedding security personnel and procedures in units where violence is likely, such as psychiatric and emergency units (Health Canada, 2022) and aligning key functions such as patient safety, patient relations, and risk management under a single leader can enhance coordination and ensure consistent implementation of improvements across the organization (Sokol-Hessner et al., 2018).

Build Personal Resilience and Empathy

Organizations can support the development of empathy in the healthcare workforce to facilitate safe work environments. Empathetic communication, which involves listening actively without judgment or trying to influence the other person’s thoughts, is essential for improving medical culture (Asch et al., 2021; CMA 2020; Shanafelt et al., 2005). Research shows that interventions can enhance empathy both immediately and in the long term. These interventions include communication skills training (Shanafelt et al., 2005), role-playing, motivational interviewing, and “humanities” approaches (Kelm et al., 2014). Training programs can also help healthcare workers build personal resilience and adopt a more holistic focus on the well-being of residents and fellows (Shanafelt et al., 2020). To educate leaders on respect

and dignity in the workplace, both Sokol-Hessner and colleagues (2018) and the NAM (2019) recommend providing resources such as coaching and ample time for both professional and personal development, as well as guidance on fostering a culture of respect and dignity.

4.2.3 Gaps & Limitations

Research on creating supportive environments to support well-being has several methodological limitations. A major issue is the reliance on cross-sectional studies, which do not establish causality and necessitate longitudinal replication for stronger evidence (Dextras-Gauthier et al., 2023). Additionally, many studies are conducted at single institutions or organizations, limiting their generalizability (Karnieli-Miller et al., 2010; Kelm et al., 2014). Some articles also lack detailed descriptions of interventions, hindering replication efforts (Kelm et al., 2014). Finally, the effectiveness of these strategies is contingent upon a collective commitment to changing organizational culture and prioritizing positive work and learning environments (Siad & Rabi, 2021).

4.3 Support Mental Health and Reduce Stigma

Provide support to health workers by eliminating barriers and reducing the stigma associated with seeking services needed to address mental health challenges.

This section draws upon 18 sources to identify the barriers to receiving mental health support among healthcare workers and offers strategies to support mental health and reduce stigma. The gaps and limitations of the available evidence are also discussed.

4.3.1 Barriers to Seeking Support

Stigma

The stigma that results from negative perceptions, attitudes, and discrimination associated with seeking mental health care is pervasive in healthcare settings and throughout our society (NAM, 2019). Stigma is perpetuated in the health professions because of the culture and training, the perceptions of health professionals, and the expectations and responses of healthcare organizations, licensure boards, and other external organizations. Reducing stigma and eliminating barriers to mental health care is critical to improving the well-being of healthcare providers and learners (NAM, 2019).

While physicians generally seem to be aware of physician health program services (e.g., provincial programs), the literature suggests that physicians are reluctant to seek mental healthcare due to concerns about the perceived severity of their situation, shame, and fear of being seen as weak or unable to cope (CMA, 2021; Wallace et al., 2009).

A 2018 CMHA survey revealed that of the 18% of Canadian physicians who were identified as depressed, only 25% considered getting help, and only 2% did (Wallace et al., 2009). Believing the situation is not severe enough (55%) and being ashamed to seek help (47%) were identified as two of the main barriers to seeking wellness support (CMA, 2021). Moreover, physicians may also worry that

others will interpret their need for help as an indicator of weakness or as an inability to cope (Wallace et al., 2009). Together, these findings suggest that stigma associated with seeking help for mental health concerns is a relevant issue within the profession.

Fear of Discipline

Physicians and medical students may be deterred from seeking help for physical, mental health, or substance abuse concerns because they fear real or perceived consequences for doing so (DiLalla et al., 2010; Wallace et al., 2009). Many medical licensing applications include questions that ask about the applicant's physical health, mental health, and substance use. Some licensing boards undertake investigations if physicians seek treatment, which can lead to sanctions irrespective of whether there is any evidence of impaired functioning, the received treatment was effective, or the diagnosis had an effect on their professional skills and abilities (Wallace et al., 2009). This underscores an important consequence of stigmatism with respect to physician health.

Access

The literature suggests that many healthcare workers lack access to high-quality, confidential mental health and substance use care. For example, only about half of practicing physicians say that their current workplace offers at least one wellness support and about a third state they have access to psychological support at work (CMA, 2021). While accessibility is slightly better for residents, where 75% of medical residents say their current workplace offers at least one wellness support (and 58% of medical residents have access to psychological support), many residents and physicians are without access to psychological and wellness supports. Further, while many organizations have crisis counselling, long-term counselling options are often limited, especially in rural areas (Health Canada, 2023).

Time

Healthcare worker capacity has been identified as a significant barrier to accessing wellness support and services (CAHS, 2023). A lack of time, a heavy workload, a stressful work environment (60%), and challenges arising from scheduling are cited as the most common barriers preventing respondents from maintaining a healthy lifestyle (CMA, 2021). Moreover, having no time (55%) was the highest-rated barrier for physicians seeking wellness support (CMA, 2021). Research also indicates that many healthcare workers drop out or fail to complete mental health and wellness programming because they lack time, which hinders the effectiveness of said programming (Ramachandran et al., 2023).

4.3.2 Strategies for Supporting Mental Health and Reducing Stigma

Encourage Self-Care

Many personal coping skills have been adapted from other research related to stress, coping, and mental health. Coping skills and strategies that have been shown to support mental health include the following:

- Changing work patterns such as working less, taking more breaks, avoiding overtime work, and balancing work with the rest of one's life (Maslach & Leiter, 2016).

- Developing coping skills such as cognitive restructuring, conflict resolution, and time management (Bynum, 2024; Maslach & Leiter, 2016).
- Obtaining social support from colleagues and family (Maslach & Leiter, 2016; Wallace et al., 2009).
- Utilizing relaxation and mindfulness strategies (Alkhawaldeh et al., 2024; Maslach & Leiter, 2016)
- Promoting good health and fitness (Bynum, 2024; Maslach & Leiter, 2016).
- Developing a better self-understanding through various self-analytic techniques, counselling, or therapy (Alkhawaldeh et al., 2024; Maslach & Leiter, 2016).

Encourage Supportive Relationships

Healthcare organizations can significantly enhance the mental health and well-being of their workforce by encouraging preceptors, mentors, advisors, and supervisors to demonstrate genuine empathy, be non-judgmental, and model vulnerability. These relationships help create a supportive environment where healthcare workers feel comfortable disclosing mental health concerns (DiLalla et al., 2010). Regular check-ins with healthcare workers, where leaders convey support and compassion, are crucial. Simple yet meaningful questions like, “What can I do for you right now?” or “What was the hardest part of your day?” can make a significant difference in helping healthcare workers feel connected and supported (Office of the U.S. Surgeon General (OUSSG), 2022).

Leaders at all levels play a pivotal role in fostering a culture that recognizes and addresses mental health concerns. According to Shanafelt and Noseworthy (2017), when organizational leaders openly discuss mental health issues and actively listen to their staff, it signals that these concerns are recognized at the highest levels. This, in turn, builds trust and encourages physicians and other healthcare workers to seek mental health support. Leaders can use various formats—such as town halls, letters, video interviews, and face-to-face meetings with clinical divisions and work units—to discuss mental health and well-being with their staff (Shanafelt & Noseworthy, 2017). Additionally, leaders should be well-versed in Employee Assistance Programs and other mental health services, promoting these resources to their teams as valuable support systems (OUSSG, 2022).

Encouraging vulnerability and open communication around mental health and substance use is vital in promoting a culture where seeking help is seen as a strength. Informal peer support plays a crucial role in this, encompassing activities like celebrating personal and professional achievements, supporting each other through challenging experiences such as patient loss or medical errors, and sharing strategies for navigating the complexities of a medical career (OUSSG, 2022; Shanafelt & Noseworthy, 2017). Peer support is essential in helping physicians manage professional challenges and feel more comfortable disclosing mental health concerns (DiLalla et al., 2010).

Moreover, formalizing peer support can further strengthen this culture of support. For example, the Mayo Clinic’s Peer Support Panel serves as a confidential resource for healthcare workers, offering assessment and support through private meetings with respected colleagues (Shanafelt et al., 2017). Minimal notes are taken to ensure confidentiality, and those in need of further assistance are connected to appropriate resources. Shanafelt and colleagues (2017) revealed that this program has been instrumental in preventing silent suffering among organizational members.

Reduce Stigma through Organizational Structure and Design

Integrating peer support and mental health services into functions that are not directly associated with mental health can help reduce stigma and increase accessibility. For example, at Stanford, the peer support function is located alongside the financial planning department rather than near areas related to mental health services like psychiatry or human resources, where disciplinary activities occur (Shanafelt et al., 2017). This strategic placement helps minimize stigma while increasing awareness and utilization of peer support services, as nearly 75% of physicians interact with the Office of Financial Planning annually (Shanafelt et al., 2017).

Creating sustainable, supportive spaces is another effective strategy that can provide valuable respite and a supportive network for individuals facing professional and personal challenges. Reintroducing the doctor's lounge, for instance, has been suggested to address physician well-being challenges (Do et al., 2023). Similar community-building spaces, such as learner lounges, should be considered in the design of physical spaces to foster connectedness and a sense of community among healthcare workers. Additionally, adopting the role of Chief Wellness Officer can support healthcare workers by focusing on protecting clinicians from occupational distress, which, in turn, supports their ability to deliver high-quality care and sustain a fulfilling career (Do et al., 2023).

Establish Supportive Organizational Practices and Resources

By establishing mental health services as safe and confidential, organizations can encourage greater utilization and support. To safeguard clinicians' privacy and foster trust, organizations must implement data collection and management strategies that protect health information and be transparent about how this data is used (NAM, 2019). This includes ensuring that mental health and peer support services remain independent from disciplinary processes. Organizations should eliminate any punitive policies related to seeking mental health and substance use care, ensuring that access to these services is voluntary and not influenced by supervisory pressures (NAM, 2019).

Organizations should strive to increase access to timely and effective health and wellness support by providing protected time for employees to access Employee Assistance Programs and other mental health services while reinforcing the confidentiality of these services is also important (OUSSG, 2022). This can include deploying a float team of mental health clinicians to offer flexible care models, such as telemedicine and virtual care, after working hours and embedding mental health professionals on units as liaisons (Do et al., 2023; Health Canada, 2023; OUSSG, 2022; Shapiro et al., 2019).

Additionally, offering evidence-based training and practices that support the prevention, early intervention, and treatment of conditions like burnout and mental health challenges is essential (OUSSG, 2022). Regularly assessing staff mental health and their willingness to utilize support systems, such as EAPs, will help organizations tailor their resources to meet the needs of their workforce better (Do et al., 2023).

Review and Implement Federal and Provincial Policies to Support Mental Health

It has been recommended that the federal government offer direct funds to health providers as well as direct funds to the provinces and territories for mental health resources (HealthCareCAN, 2022). Examples of these resources can be found across Canada. In Ontario, the Centre for Addiction and

Mental Health (CAMH) provides support for healthcare practitioners and students through the Extension of Community Health Outcomes (ECHO) Coping with COVID program (CAMH, 2017, as cited in CAHS, 2023). Similarly, British Columbia has a new provincial health workforce wellness team to support and supplement existing mental health resources for healthcare practitioners (Government of British Columbia, 2022, as cited in CAHS, 2023).

The federal government should also invest in programs and resources to help improve the mental health and wellness of healthcare workers. Increasing programs geared specifically to help healthcare workers through psychotherapy needs assessments, peer support, and workplace mental health training and intervention services are only some of the resources that would help them maintain their mental health and well-being (HealthcarCAN, 2019).

Provincial legislative bodies should create legal protections that allow clinicians to seek and receive help for mental health conditions and to deal with the unique emotional and professional demands of their work through employee assistance programs, peer support programs, and mental health providers without the information being admissible in malpractice litigation (NAM, 2019). National Academies of Medicine (2019) has also recommended that licensing boards, health system credentialing bodies, disability insurance carriers, and malpractice insurance carriers either not ask about clinicians' personal health information or else inquire only about clinicians' current impairments so that health workers are not deterred from seeking mental health and substance use care (NAM, 2019).

4.3.3 Gaps & Limitations

The evidence on mental health and stigma and related interventions included in this review face several design-related limitations. Common issues include cross-sectional designs (e.g., Brazeau et al., 2014), which capture data at a single point in time and may not reflect changes over time. Low response rates (e.g., DiLalla et al., 2010; Kassam et al., 2024) and limited personal variables (Brazeau et al., 2014) further constrain the applicability of the results. Additionally, some studies have been overly lengthy or used poor measures (Kassam et al., 2024), affecting the reliability of their findings. Respondent samples have not always been representative of broader CMA membership, which limits generalizability. Longitudinal studies, which track changes over time, are needed to provide more robust evidence on burnout and intervention effectiveness (CMA, 2018).

4.4 Engage Effective Resources to Minimize Administrative Burden

Invest in staffing and human resources to alleviate the administrative burden placed on physicians, nurses (including nurse practitioners), and other members of health care teams, increasing the amount of time available for patient care. Optimize and expand the use of health information technologies that support health workers in providing high-quality patient care and serving population health, and minimize daily requirements, such as documentation, that inhibit clinical decision-making or add to administrative burden.

This section analyzes 20 sources to highlight the prevalence, impact and causes of administrative burden in the health care system. It also provides strategies and solutions for reducing administrative burden and improving efficiency. The gaps and limitations of the available evidence are also discussed.

4.4.1 Prevalence and Effects of Administrative Burden

Administrative burden is a significant issue within the health workforce, impacting numerous sectors and accounting for a substantial portion of health workers' time. Looking at estimates from across Canada, physicians spend 10 hours per week (CMA, 2022), 48.8 million hours annually (CIHI, 2023), and as much as 30% of their time on administrative tasks (Casey, 2023). At the provincial level, physicians in Nova Scotia spent approximately 10.6 hours per week or 500,000 hours per year on administration (Office of Regulatory Affairs and Service Effectiveness (ORASE), 2024).

Administrative burden is not uniformly shared across the health workforce. Family, rural, younger, female, and racialized physicians typically spend more time on administrative tasks than their specialist, urban, clinic, and hospital-centred male counterparts (Doctors Manitoba, 2024a).

Administrative burden has implications for health workforce well-being and overall healthcare delivery. Administrative burden impedes workforce recruitment and retention (Casey, 2023; CMA, 2021; CIHI, 2023) and contributes to burnout (Drummond & Jones, 2023). At the level of healthcare delivery, administrative burden requires workers to spend time away from patient care, contributing to service delays and increasing risks to patient safety (Casey, 2023). Returning hours spent on administration to the health workforce to engage directly in tasks related to patient care could facilitate a 10% expansion in patient rosters and increase primary care coverage from 78-85% (Drummond & Jones, 2023).

4.4.2 Causes of Administrative Burden

Inefficient Technological Design

Technology has the capacity to improve the way the healthcare system functions (Itchaporia, 2021) and alleviate the administrative burden on healthcare workers. However, it also has the potential to exacerbate administrative burden if systems are poorly designed and difficult and time-consuming to use.

The leading contributors to administrative burden include pop-up messages that interrupt workflows, platforms that require excessive mouse clicks to carry out a task, programs that lack visualizations for

ease of navigability (OUSSG, 2022), and overly complicated or manual systems. Forms that are neither standardized nor harmonized, the "log-in" burden that results from relying on multiple platforms, and common IT-related concerns such as hardware and WIFI failures were also mentioned (Casey, 2023; CAHS, 2023; Doctors Manitoba, 2024a). In some cases, the technology itself is less important than the burden of having to learn yet another system (Thomas et al., 2021).

Lack of System Interoperability

A lack of systems interoperability is especially burdensome for practitioners (CIHI, 2023; Doctors Manitoba, 2024a). Among Canadian family physicians, although 89% of primary care physicians send patient information to specialists, only about half receive information back on changes made to the patient care plans and medication. This breakdown in information sharing impedes family physicians' ability to coordinate and provide effective care (CIHI, 2023).

Lack of Practitioner Input

Finally, new technologies may not reduce administrative burden as effectively as improved technologies (Thomas et al., 2021). Improvements tend to reflect the needs of practitioners and patients more accurately over time and require little to no time to learn. When, for example, electronic medical records are created without practitioners' input, they tend to frustrate, overburden, and drain practitioners' sense of personal autonomy (CAHS, 2023).

Workflow Obstructions

Workflow-related contributors include duplicative tasks, failure to delegate tasks, and treating physicians as 'gatekeepers' of important documents (Casey, 2023; CAHS, 2023; Doctors Manitoba, 2024a).

4.4.3 Strategies for Reducing Administrative Burden

Develop Efficient Technological Solutions

Technological solutions should prioritize enhancing efficiency and reducing the time spent on administrative tasks. This can be achieved by minimizing the number of clicks required to complete tasks, designing intuitive and efficient platforms, providing mandatory system training where necessary (Thomas et al., 2021), and ensuring that technological failures are addressed quickly (Shapiro et al., 2018). One potential improvement is the implementation of proximity cards for computer sign-on, which have been demonstrated to reduce excessive logins and save health workers approximately 30,900 hours annually (ORASE, 2024).

Health information management systems can be enhanced by incorporating platforms that allow for effective communication of test results to patients, tracking and following up on high-risk laboratory results, and directing appropriate actions based on these results (Khatami et al., 2024). The integration of speech recognition systems to assist with physician notetaking may help reduce the perceived workload (DeChant et al., 2019; Thomas et al., 2021) in addition to algorithms automating the compilation of electronic medical records (Arslan et al., 2024). However, it is crucial to ensure the accuracy of these systems (Doctors Manitoba, 2024a).

Strengthen Interoperability of Systems

Integrating health systems and strengthening the interoperability of existing systems is key to reducing administrative burden (CIHI, 2023; Doctors Manitoba, 2024a; Khatami et al., 2024; OUSSG, 2023; Thomas et al., 2021). The interoperability of health information systems can improve the quality of care by reducing the cognitive workload on health workers, increasing system efficiency, and reducing patient risk due to inaccurate information (Khatami et al., 2024). This includes efficient booking and scheduling systems that are interoperable with electronic medical records and physician-pharmacist communication platforms (Khatami et al., 2024) and greater interoperability to facilitate practitioner collaboration and access to patient medical records (OurCare, 2024; WHO, 2022b).

Standardized health information systems are needed to facilitate a pan-Canadian data-sharing platform with the necessary privacy provisions, enable document harmonization and centralization, and negate the need for duplicative efforts (CAHS, 2023; Thomas et al., 2021). However, it is important to balance interoperability with the needs of specialty clinics and roles; otherwise, the lack of customizations can exacerbate the burden (Health Canada, 2023; Thomas et al., 2021).

Policy and regulatory changes should be developed to support data sharing through coordination across different levels of the healthcare system, and careful consideration of the impacts on healthcare workers should be taken into account (Health Canada, 2022; Health Canada, 2023). National guidelines and clinical decision support systems should be established to minimize unnecessary or duplicated procedures (Casey, 2023). Regular reviews of laws, regulations, and standards ensure alignment with technological advancements and the evolving needs of healthcare workers (NAM, 2019), including collaboration with regulatory bodies to help limit low-value documentation requirements, streamline processes, and reduce the burden on health workers (Shanafelt, 2021; WHO, 2022b).

Co-Develop Health Information Systems

To alleviate the administrative burden and increase efficiency, co-develop or co-improve administrative systems in collaboration with the health workers who use them (Health Canada, 2023) to identify the main sources of overload, clinical decision complexity, and interruptions to improve systems. Co-development can, in appropriate circumstances, include patient populations to ensure inclusive, accessible designs that are easy to use (NAM, 2019; OUSSG, 2022).

Adopt a Burden Reduction Lens for New Policies

Adopt a burden reduction lens when developing any regulatory or policy change involving the health workforce. Every administrative solution should either decrease or at least maintain the current workload on physicians (Doctors Manitoba, 2024a), minimize adverse effects, and maximize positive change (NAM, 2019).

Monitor, Evaluate, and Continuously Improve

Allocate the necessary resources to assess the effects of regulations, policies and standards on clinicians before and after their implementation (NAM, 2019; Shanafelt, 2021). This approach ensures

that any adverse effects can be identified and addressed. Furthermore, the development of quality metrics to assess documentation practices can help maintain a focus on continuous improvement, ensuring the reduction of administrative burdens remains a priority over time (Health Canada, 2023).

Leverage Teamwork & Task Shifting

The most effective interventions for reducing administrative burden are those that directly address workflow inefficiencies within clinical teams (Thomas et al., 2021). One key approach is to reduce the time physicians spend on administrative tasks by delegating these responsibilities to other capable roles, such as scribes and medical assistants (CAHS, 2023; DeChant et al., 2019; Sinsky & Panzer, 2022; Thomas et al., 2021). Additionally, introducing team communication strategies can help foster more supportive and appreciative workplace cultures, which in turn can reduce burnout. For instance, providing physicians and other practitioners with time to share experiences and insights and pursue professional development opportunities can contribute to a healthier work environment (DeChant et al., 2019).

Optimize the Workforce

To optimize healthcare team efficiency, identify the most appropriate tasks for each member of the team—such as nurses, occupational therapists, physicians, and personal care workers—and ensure they receive the necessary support to focus on these roles effectively (Health Canada, 2023). Limiting work hours and enhancing communication between team members should also be considered while ensuring that reduced work hours do not lead to the same workload being compressed into less time (DeChant et al., 2019). Dedicated funding for hiring additional clerical staff is essential to support primary health teams with their administrative processes (Casey, 2023). Furthermore, mandating adequate nurse-to-patient ratios can significantly enhance the efficiency and effectiveness of healthcare teams (Duong & Vogel, 2023).

Co-Develop Workflow Solutions

Designing workflow solutions in collaboration with practitioners is crucial for appropriately matching their skills to tasks and laying the groundwork for more permanent policy and technological changes (Thomas et al., 2021). Since practitioners are typically aware of existing workflow inefficiencies and tasks that do not require their expertise, they can provide valuable insights for effective workflow revisions (Doctors Manitoba, 2024b; Health Canada, 2023). Furthermore, integrating patient feedback into workflow solutions is important, as patients can often identify aspects of care that are redundant or contribute little to no value (Sinsky & Panzer, 2022).

4.4.4 Gaps & Limitations

There are several limitations to the available research on reducing administrative burden. For instance, there are relatively few studies from Canada, and many of the studies that do exist are of low quality, with most being too distinct to allow for meaningful comparisons (DeChant et al., 2019; Thomas et al., 2021). Few studies have focused on the impact of electronic medical records or explored promising improvements despite the significant impact electronic medical records have on administrative tasks (CAHS, 2023). Furthermore, healthcare practitioners did not always contribute to the recommendations

for administrative solutions, which may limit their applicability (Casey, 2023). To strengthen these recommendations, more high-quality Canadian research across different healthcare settings is needed, particularly studies that address the challenges and potential improvements related to electronic medical records.

4.5 Institutionalize and Invest in Well-Being as a Long-Term Value

Address systemic issues that inhibit worker well-being to create sustainable public health and health systems that are resilient and responsive now and into the future.

This section examined 23 sources to identify the key challenges and solutions for creating a sustainable and resilient healthcare system that supports well-being. The gaps and limitations of the available evidence are also discussed.

4.5.1 Health System Challenges that Influence Well-being

Jobs with High Demand

Burnout is a syndrome resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: 1) high emotional exhaustion or feelings of energy depletion; 2) increased mental distances from one's job, or feelings of negativism or cynicism related to one's job; and 3) a low sense of personal accomplishment or a sense of ineffectiveness (NAM, 2019; WHO, 2022a). Currently, many clinicians face overwhelming job demands, including increased workloads, time pressures, technological challenges, moral and ethical dilemmas, and work inefficiencies like administrative burdens and inadequate technology usability (CAHS, 2023). Work overload is a significant predictor of burnout, with the risk being up to 2.90 times greater for those experiencing heavy workloads, and it also increases the likelihood of intent to leave by up to 2.10 times (Rotenstein et al., 2015).

Insufficient Resources

Insufficient job resources and support contribute significantly to burnout. Healthcare workers who lack control over their jobs, alignment between their professional and personal values, meaningful work, peer and supervisor support, and autonomy are at a higher risk of experiencing burnout (CAHS, 2023; NAM, 2019). These missing resources, both tangible and intangible, are crucial in preventing burnout and ensuring the well-being of healthcare professionals.

Inadequate Preparation

Healthcare practitioners who feel unprepared for their role are more likely to experience decreased well-being as a result (CAHS, 2023). For example, healthcare practitioners who received training in handling infectious disease outbreaks had lower rates of anxiety (Brooks et al., 2018). In contrast, those who perceived their training as inadequate were more likely to experience burnout and post-traumatic stress symptoms. A separate survey found that oncologists who did not have sufficient communication skills

had substantially worse well-being outcomes than their colleagues who felt as though they were adequately trained (Shanafelt, 2005).

Remuneration

Many healthcare workers are motivated by rewards, but incentive structures based on productivity can have unintended negative consequences. When practitioners are incentivized to see more patients or perform more procedures, they may shorten the time spent with each patient, order more tests or procedures, or work longer hours. These strategies can compromise the quality of care and, in the case of longer work hours, increase the risk of physician burnout, making the approach ultimately self-defeating (Shanafelt & Noseworthy, 2017).

On the other hand, dissatisfaction with pay or the perception that compensation does not adequately reflect work demands, responsibilities, or the challenges of work-family conflict can lead healthcare practitioners to consider leaving their jobs (Adams et al., 2021; Halter & Boiko et al., 2017; Yong et al., 2020 as cited in CAHS, 2023). Thus, while compensation structures can contribute to burnout, they also play a crucial role in influencing healthcare practitioners' decisions to stay or leave their positions. This highlights the need for balanced compensation strategies that motivate without leading to burnout or turnover.

4.5.1 Strategies for Institutionalizing Well-Being as a Long-Term Value

Invest in Health Workforce Well-being

Governments at all levels must significantly increase their investments in the mental health and wellness of healthcare workers (HealthCareCAN, 2022). Dedicated funding for both research and programming aimed at improving the mental health of healthcare professionals is needed. This includes increasing the availability of programs that support healthcare workers through psychotherapy, conducting needs assessments, offering peer support, and providing workplace mental health training and intervention services. Such initiatives would help healthcare workers maintain or improve their mental health and well-being, which is essential for sustaining a resilient and effective healthcare workforce (HealthCareCAN, 2022).

Assess and Limit Workload and Increase Control

Research highlights that standardized methods for managing workload and enhancing employee control over their work can help mitigate burnout and reduce turnover intentions (Rotenstein et al., 2015; Shanafelt & Noseworthy, 2017). Organizations should consider strategies such as adjusting patient-to-physician ratios, increasing medical rounds teams, developing float pool teams to alleviate work overload (Thomas Craig et al., 2021), and providing flexible work schedules to help balance personal responsibilities with work efforts (Shanafelt & Noseworthy, 2017; Yuan et al., 2023).

Furthermore, expanding the role of nurse practitioners by enhancing their scope of practice could further optimize their contribution to the healthcare system and address workforce challenges (Drummond & Jones, 2023). Although Canada has a growing number of nurse practitioners, their current numbers are still insufficient compared to the demand (Drummond & Jones, 2023).

Design Organizations to Support Well-being

To effectively institutionalize well-being within organizations, several organizational design strategies should be considered. First, establishing a dedicated leadership role focused on professional well-being is essential. This leader and their team should coordinate across all organizational programs, particularly those related to patient care quality, safety, and occupational safety (CAHS, 2023). Supporting this role by embedding change agents within each work unit can further promote well-being at a local level. Successful models include formal titles like Department Well-being Director, as used by Stanford Medicine, or less formal roles such as Wellness Champions. However, formal appointments combined with designated protected time are generally more effective (Shanafelt et al., 2015).

Additionally, organizations should ensure that executive and board leadership prioritize and continuously improve the clinical work environment. Governing boards must hold organizational leaders accountable for fostering and maintaining a positive and healthy work atmosphere (CAHS, 2023). This comprehensive approach helps embed well-being into the organizational culture and supports sustained improvements in professional satisfaction and performance.

Encourage Appropriate Leave Time

Attendance and leave policies should be reviewed and adapted to enhance flexibility and accommodate individual circumstances, thereby supporting overall health and well-being (Do et al., 2023). It is important to ensure that employees are fully informed about any new policies and their implications to ensure they are implemented effectively (Do et al., 2023).

Nurses, regardless of their tenure, should have equitable opportunities to take vacation time when desired (Health Canada, 2023). To facilitate this, organizations could consider adding capacity through measures such as implementing vacation relief float teams. These teams consist of permanent employees who can work across different units, providing coverage during peak vacation periods (Health Canada, 2023). Additionally, offering paid clinical externships for students can provide exposure to various nursing units and teams while also adding extra capacity to the organization during busy times. These strategies can help ensure that healthcare workers can take necessary leave without compromising service delivery.

Support Personal and Professional Development

Supporting personal development remains a critical component of supporting well-being. Career growth, training, and promotional opportunities are associated with retention and intent to stay for healthcare practitioners (CAHS, 2023). To maximize effectiveness, professional and personal development must be informed by theory and evidence (Do et al., 2023). New healthcare practitioner graduates are a group that often experiences high levels of stress and anxiety (Eckerson, 2018). Developing and implementing formal transition programs for new graduates (or new managers or leaders) that foster the development of critical competencies results in smooth career transitions and feelings of support (Health Canada, 2023). Formal mentorship programs, defined by relationships that are based on collaboration and trust, have resulted in increased retention of nurses and longevity of nursing careers (Health Canada, 2023). It is recommended that mentorship be offered across the scope of nursing careers, be closely integrated with nursing orientation and preceptorship, and be voluntary (Health Canada, 2023).

Establish Organizational Strategies to Address Well-being

The actions of healthcare organization leaders significantly impact the day-to-day work environment for healthcare professionals (Shanafelt et al., 2023). Leaders should integrate health and well-being into all organizational policies, culture, and mandates, ensuring that these elements are central to administrative, operational, and academic functions. This holistic approach should be reflected in medical schools (International Conference on Health Promoting Universities and Colleges, 2015) and other healthcare settings through continuous policy reviews and amendments (Do et al., 2023).

The Well-being 2.0 phase represents a comprehensive wellness intervention aimed at addressing the root causes of occupational distress (Shanafelt, 2021). Unlike traditional approaches that focus on mitigating burnout, Well-being 2.0 emphasizes improving systems, processes, teams, and leadership to prevent distress and integrate wellness as a core organizational strategy. This shift involves moving from a return-on-investment mindset to a value-on-investment mindset (Shanafelt, 2021).

To foster healthcare worker well-being, Shanafelt and colleagues (2023) recommend seven organizational steps:

- Establish a common framework for action.
- Appoint and support a unit well-being leader.
- Assess each unit's needs and compare them with benchmarks.
- Integrate unit-level well-being efforts with the organizational improvement infrastructure.
- Create consistent structures for well-being interventions.
- Monitor progress using unit-level metrics.
- Consider unit perspectives when evaluating organizational progress.

Additionally, Shanafelt and colleagues (2021) outline four fundamental components for a successful well-being strategy:

- Foundational Programs: Implement effective, evidence-based interventions and best practices.
- Cultural Transformation: Strengthen organizational culture through deliberate assessments and improvements.
- Rapid Iterative Experimentation: Pilot and refine new programs based on rigorous evaluations before scaling.
- Sustainability: Ensure the long-term viability of well-being initiatives.

For meaningful progress, organizations should examine how medical culture has historically allowed harm to persist and address these issues proactively (Siad & Rabi, 2021). Canadian medical schools, professional organizations, and regulatory bodies have made strides in promoting equity, diversity, and inclusion. However, for these initiatives to succeed, they must promote both diversity and genuine collaboration between new and existing members. Crucially, the responsibility for championing equity, diversity, and inclusion should not rest solely on equity-deserving individuals (Siad & Rabi, 2021).

Monitor and Assess to Inform Continuous Improvement

The use of validated measurement tools to assess burnout and well-being as routine performance metrics is recommended. Establishing relevant metrics and goals can enhance accountability to the

organization's board and elevate well-being as a priority at all leadership levels (Shanafelt et al., 2015). Data from these assessments should inform strategies to prevent and reduce clinician burnout and improve professional well-being, contributing to a continuous learning and improvement process. Additionally, organizations should share data, results, and efforts internally to foster transparency and collective progress (CAHS, 2023; Shanafelt & Noseworthy, 2017).

Assessments should be conducted at least annually and at regular intervals to effectively measure burnout and well-being (CAHS, 2023; Shanafelt & Noseworthy, 2017). Measurement tools should cover a range of dimensions, including burnout, engagement, professional fulfillment, fatigue, emotional health, and overall well-being and correlate with relevant outcomes such as safety, quality, and productivity, and be supported by national benchmarking data (Shanafelt & Noseworthy, 2017).

Additionally, organizations might implement measures to track after-hours documentation, procedural efficiency (e.g., operating room turnaround times), and teamwork (Shanafelt et al., 2015). Creating a department scorecard to monitor efforts within each unit can also be beneficial. For each domain, using transparent criteria to categorize efforts as beginner, intermediate, or advanced and assessing their effectiveness can help track and improve well-being initiatives (Shanafelt et al., 2015).

Establish Remuneration and Compensation Schemes that Support Retention

Remuneration is critical for the retention of healthcare practitioners, such as nurses and physicians. Higher salaries are associated with increased job retention (Adams et al., 2021, as cited in CAHS, 2023). However, to address the potential drawbacks of productivity-based pay, some organizations have included care-focused metrics, like patient satisfaction and quality measures, in their compensation formulas (Shanafelt & Noseworthy, 2017).

Alternatively, organizations might consider offering non-financial rewards, such as greater flexibility to enhance work-life integration or protected time for activities like quality improvement, community outreach, research, education, or mentorship (Shanafelt & Noseworthy, 2017). These rewards can help physicians align their work with personal and professional goals, potentially leading to greater fulfillment and productivity (Shanafelt & Noseworthy, 2017).

4.5.2 Gaps and Limitations

Given the high prevalence of burnout, effective strategies to address this issue are urgently needed. However, research on the efficacy of various approaches to reducing burnout remains limited, with few randomized control trials and follow-up assessments available (CAHS, 2023; Maslach & Reiter, 2016). It is still unclear whether a combination of strategies or a single, specific intervention is more effective in tackling burnout (Maslach & Reiter, 2016).

Many interventions focus on individual-level strategies to improve personal resilience and coping. While these strategies can be beneficial and play a role in larger organizational efforts, they alone are insufficient for addressing clinician burnout (CAHS, 2023). A meta-analysis found that organization-directed interventions had greater treatment effects compared to individual-directed approaches, indicating that individual-level interventions, such as mindfulness and communication skills, are more effective when supported by broader organizational strategies (DeSimone et al., 2019). Future

interventions should integrate person-level approaches with system-level solutions that address work quantity and quality (Khan et al., 2021).

4.6 Recruit and Retain a Diverse and Inclusive Health Workforce

Promote careers in the health professions and enable healthy work environments that promote inclusiveness, diversity, equity, accessibility, and a thriving workforce.

A total of 25 sources addressed recruiting and retaining a diverse and inclusive health workforce. This section identifies the diversity gaps and barriers to improving diversity and equity within the Canadian health workforce. It also presents strategies for increasing diversity and recruiting, retaining, and supporting specific population groups. The gaps and limitations of the available evidence are also discussed.

4.6.1 Diversity Gaps in the Canadian Health Workforce

It is widely recognized that the health workforce should reflect the diversity of the population it serves (Shanafelt, 2021; CAHS, 2023). Patients typically interact with health workers in their most vulnerable moments, and a diverse health workforce is more likely to overcome racism and discrimination and provide safe care (CAHS, 2023; Siad & Rabi, 2021). A diverse health workforce also creates a more dynamic learning environment and enhances service delivery (Kelly-Blake et al., 2018, as cited in CAHS, 2023).

The Canadian health workforce currently underrepresents racial and ethnic minorities and individuals from rural and socioeconomically disadvantaged backgrounds (CAHS, 2023). The lack of diversity and equity contributes to inequities in healthcare delivery, cultural competency, and patient outcomes (CAHS, 2023; Schreiber et al., 2021).

Racialized individuals are especially underrepresented in healthcare leadership. Twenty-eight percent of the hospital executives in provinces and territories across Canada (Sergeant et al., 2022 as cited in CAHS, 2023) and more than 40% of regional health authorities and community agencies have no racialized individuals in senior management (Sinha et al., 2013 as cited in CAHS, 2023). Furthermore, Indigenous professors occupy less than 1% of Canadian university leadership positions, though this spans programs outside of healthcare (Diversity Gap Canada, 2019, as cited in CAHS, 2023). While more standardized race-based health workforce data is needed to understand these outcomes better (CAHS, 2023), ample evidence supports the notion that there are significant diversity gaps in the Canadian health workforce.

4.6.2 Systemic and Organization Barriers to Achieving a Diverse Health Workforce in Canada

Systemic and organizational barriers, such as hiring practices, access to education and training, and discrimination, are key challenges to achieving diversity. Bias in hiring and promotion practices restricts opportunities for underrepresented groups (Balante et al., 2021, as cited in CAHS, 2023). These barriers

are often compounded by a lack of targeted recruitment and retention efforts aimed at diverse populations (Siad & Rabi, 2021).

Limited access to quality education and training programs further restricts the pipeline of diverse candidates to health professions. Socioeconomically disadvantaged groups are disproportionately excluded from medical training programs that rely on, for example, the medical college admission test (MCAT) (Ware et al., 2021 as cited in CAHS, 2023). Exorbitant application, tuition, and residency fees further limit diverse applicants (Ware et al., 2021 as cited in CAHS, 2023).

Discrimination in workplace environments contributes to low representation of racialized and gender-diverse groups. Underrepresented groups are more likely to experience workplace harassment (Berlingieri et al., 2022, as cited in CAHS, 2023). Eighty-eight percent of Black nurses (Registered Nurses Association of Ontario, 2022 as cited in CAHS, 2023) and more than 70% of Black physicians in Ontario have had negative experiences based on their race (Mpalirwa et al., 2020, as cited in CAHS, 2023). Asian Canadian practitioners reported experiencing heightened discrimination and threats of violence during the COVID-19 pandemic (Shang et al., 2021, as cited in CAHS, 2023). Additionally, 2SLGBTQIA+ healthcare practitioners have reported experiencing harassment and discrimination from fellow practitioners and patients (Eliason et al., 2017, as cited in CAHS, 2023), and witnessed discrimination against 2SLGBTQIA+ patients (Schreiber et al., 2021). Discrimination is associated with heightened emotional and psychological stress, poor mental health, burnout, and adverse physical outcomes (Filut et al., 2020, McKenzie, 2003, Public Health Agency of Canada, 2020, and Vaismoradi et al., 2022 as cited in CAHS, 2023). As a result, disadvantaged groups tend to exhibit higher attrition rates (Filut et al., 2020, Sudol et al., 2021, and Zhang et al., 2020, as cited in CAHS, 2023).

4.6.3 Organizational Strategies for Increasing Diversity in the Health Workforce

Removing structural barriers and developing safe organizational cultures is key to increasing the diversity of the health workforce (CAHS, 2023). Federal and provincial/territorial governments should embed diverse groups in future health workforce planning, fund efforts to eradicate barriers, implement policies and processes to support equity in the workplace and collect data to monitor progress (Health Canada, 2022). This should be achieved through formal statements, action plans, and dedicated resources to cultivating equitable environments (Merry et al., 2021).

Creating culturally safe organizations involves addressing power imbalances by encouraging self-reflection and fostering respectful, trust-based relationships. Leaders and employees must actively work to understand and overcome biases, ensuring that everyone feels valued and respected (CAHS, 2023). This can be achieved through anti-discrimination and bias training (Merry et al., 2021), increasing the representation of diverse practitioners in decision-making roles, introducing upstream recruitment strategies such as employment equity programs (CAHS, 2023; Shanafelt, 2021), and co-designing physical, social, and virtual spaces with diverse stakeholders to foster inclusion and build community (Do et al., 2023). Promoting inclusion and respect also requires implementing safe reporting mechanisms for unprofessional behaviour. These measures help create an environment where all employees feel supported and fulfilled in their roles (Health Canada, 2022; Burns et al., 2021; Siad & Rabi, 2021).

Academic institutions should introduce targeted policies and programs to support the growth of a diverse workforce. For example, academic institutions could extend undergraduate programs for Black and Indigenous students who meet academic requirements to enter medical school without the MCAT requirement (Queen's University Faculty of Health Sciences, n.d., as cited in CAHS, 2023) and implement specialized application streams to increase admission of underserved groups (University of Toronto MD Program, 2023, as cited in CAHS, 2023).

4.6.4 Strategies for Recruitment and Retention of Specific Populations

Indigenous Peoples

Historical and ongoing colonization has created numerous systemic barriers that hinder Indigenous peoples from joining the health workforce. These barriers include racism, discrimination, geographic isolation, and socioeconomic disparities, all of which limit access to healthcare education and training for Indigenous communities (CAHS, 2023). As a result, Indigenous peoples are underrepresented across all health professions, from nursing to dentistry (Taylor et al., 2019, as cited in CAHS, 2023).

To address this, strategies to recruit Indigenous peoples must go beyond general diversity efforts and reflect their right to self-determination as outlined in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP); 2007). This means taking a collaborative, Indigenous-led approach to policies and programs that respect Indigenous conceptions of well-being (Tsuji et al., 2023). A distinctions-based lens is also essential, recognizing the unique historical, cultural, linguistic, and epistemological differences between Inuit, Métis, and First Nations peoples (CAHS, 2023).

Government at all levels must respond to the Truth and Reconciliation Commission of Canada's (TRC; 2015) call to increase Indigenous employment in the health workforce by supporting Indigenous-led initiatives in curriculum development, hiring, admissions, and retention strategies (Anderson et al., 2019, as cited in CAHS, 2023). Adequate funding is crucial to prevent the financial and emotional burden, often referred to as the "minority tax," from falling on Indigenous practitioners (Filut et al., 2020; Schilgen et al., 2017, as cited in CAHS, 2023).

At the organizational level, it is important to provide culturally safe environments, professional development opportunities, mentorship, and peer and leadership support. Encouraging teamwork, collaboration, and proper recognition are also key (CAHS, 2023). Additionally, incorporating traditional knowledge roles within healthcare teams can offer greater opportunities for Indigenous professionals and enhance the cultural safety of services (National Collaborating Centre for Indigenous Health, 2023). For example, in rural British Columbia, Indigenous Health Managers have been integrated into operational and medical teams with equal responsibility and accountability in overseeing patient care. Although this model requires further testing and significant financial support, it has already strengthened relationships through its co-development with Indigenous leaders (Healthcare Excellence Canada (HEC), 2024g).

Women

Although most major hospitals across Canada reflect gender parity (Sergeant et al., 2022, as cited in CAHS, 2023*)*, women are underrepresented in leadership roles (Glauser, 2018; Yang, Rhee et al., 2019,

as cited in CAHS, 2023) and paid less than men for the same work due to systemic biases (Cohen & Kiran, 2020, as cited in CAHS, 2023).

Women face barriers in advancing to leadership roles due to pervasive gender bias and stereotypes in the healthcare sector (Ayaz et al., 2021; Bucknor et al., 2018; Glauser, 2018, as cited in CAHS, 2023; Billick et al., 2022). Women are more likely to be younger, caregivers of parents or children, and in earlier stages of their career – all of which are associated with higher rates of burnout and lower well-being (CMA 2021), which have been exacerbated by the pandemic (Morgan et al., 2022, as cited in CAHS, 2023).

Addressing inequities, including pay gaps, within health workforce planning policies and strategies (Ayaz et al., 2021, as cited in CAHS, 2023), informed by gender-disaggregated data collection (Gupta et al., 2021, as cited in CAHS, 2023), should be completed at the federal and provincial/territorial levels.

At the organizational level, it is encouraged to implement flexible work policies and parental leave and childcare support to help women balance career and family responsibilities (CMA 2021). It is also suggested that programs specifically designed to advance women into leadership positions, including mentorship and sponsorship, be created and promoted (Billick et al., 2022).

People with Disabilities

Less than 5% of healthcare practitioners in Canada report having a disability, which is among the lowest representation of the working population with disabilities (CAHS, 2023). Ableism is prevalent in healthcare practitioner groups and discourages people with disabilities from entering or completing education and training (Lindsay et al., 2022, as cited in CAHS, 2023), and is also associated with poorer mental health outcomes (CMA, 2022).

Health organizations should create positive and accommodating work environments that connect students, practitioners, and leaders with disabilities, encourage open communication about disabilities, and provide spaces for safe disclosure (Bulk et al., 2020; Mayer et al., 2023). They should also incorporate policies and strategies to support the understanding that individuals with disabilities have unique needs and require tailored support (Bulk et al., 2020; Mayer et al., 2023).

4.6.5 Strategies for Expanding the Rural and Remote Workforce

Rural and remote communities often lack access to healthcare education and training programs, making it difficult for residents to pursue careers in the health sector. The scarcity of healthcare facilities and job opportunities in rural areas can deter professionals from living and working in these regions. Rural healthcare settings frequently operate with limited resources (Calma et al., 2019, as cited in CAHS, 2023), leading to high workloads and burnout (CMA, 2022), which can make these positions less attractive to potential healthcare workers. Practitioners in isolated areas are also more vulnerable to mental health challenges owing to the lack of social connection and limited staffing (CMA, 2022).

Federal and provincial/territorial governments should fund programs that support recruitment and retention initiatives and infrastructure improvements to rural healthcare facilities. Encourage

collaboration between jurisdictions to share successful initiatives and partner with local organizations to strengthen programs is also encouraged (CAHS, 2023).

Health organizations should optimize the scope of practice of existing professionals (CAHS, 2023) by providing opportunities for rural and remote individuals without medical training to undertake specialist skill development and join the health workforce (HEC, 2024a). This not only strengthens the rural and remote recruitment effort, it decreases the workload on other practitioners and can dually increase Indigenous employment (HEC, 2024a).

Additional recommended strategies to support rural and remote health workforce include strategies promoting well-being amongst existing practitioners through community engagement activities (CAHS, 2023), offering flexible or part-time positions (HEC, 2024; HEC, 2024f), and longer clinical placements (Abelsen et al., 2022; Byfield et al., 2019; Calma et al., 2019; Kumar & Clancy, 2021; O'Sullivan et al., 2018; Raymond Guilbault & Vinson, 2017; Shah et al., 2021, as cited in CAHS, 2023)

4.6.6 Gaps & Limitations

Although the body of literature on developing a diverse health workforce is expanding, there are several significant limitations. One major gap is the lack of information on the experiences of specific groups. Issues related to sex, gender identity, and sexual orientation are underexamined in the literature, as is ageism (Health Canada, 2022; Merry et al., 2021; WHO, 2021). This underrepresentation makes it challenging to accurately assess the effectiveness of diversity initiatives and to develop targeted strategies.

Additionally, there is a lack of standardized data collection approaches for equity-deserving groups. Ethical data collection methods that are governed by these groups are essential for enabling governments and organizations to quantify workforce shortages accurately and create effective recruitment strategies (Health Canada, 2022). Moreover, research on diversity in the health workforce often focuses on single identity categories, such as race, gender, or disabilities, without considering how these identities intersect. The absence of an intersectional analysis limits the understanding of the compounded experiences of discrimination and exclusion faced by individuals who belong to multiple marginalized groups.

Finally, much of the research on effective diversity strategies is concentrated on short-term, case-specific solutions. For instance, HEC (2024a; 2024b; 2024c; 2024d; 2024e; 2024f; 2024g; 2024h) highlights promising practices for recruitment and retention but notes that these initiatives have typically been tested only in a few clinical or academic settings with a small number of participants. Furthermore, many proposed solutions focus on individual-level changes, such as mentorship and cultural training (Siad & Rabi, 2021), while larger, structural changes are needed to address systemic barriers and create lasting impact.

4.7 Invest in Measurement, Assessment and Research

Determine the most effective measurement and assessment tools for health workforce well-being, burnout, and related metrics and identify key areas of focus for future research to address gaps in knowledge about well-being and burnout.

This section draws upon 33 sources to describe the current gaps and limitations of the available measurements, assessments, and research and offers strategies to improve the evidence base to address health workforce burnout and improve well-being effectively.

4.7.1 Current Gaps in Measurement, Assessment, and Research

Inconsistent Metrics

Current research and data on health workforce well-being and burnout suffer from the misapplication of measurement tools (Dyrbye et al., 2018) or inconsistent metrics and definitions (Strauss et al., 2016) – as do proxies like compassion (Strauss et al., 2016). Well-being and burnout are complex experiences. Understandably, authors measure them via several indicators such as quality of life (West et al., 2009), empathy (Thomas et al., 2007), workload (Rosenstein et al., 2015), perfectionism (Hill & Curran, 2015), unprofessional conduct (Dyrbye et al., 2010), organizational leadership (Dyrbye et al., 2020); in limited settings (Billick et al., 2022; DeSimone et al., 2021; DeChant et al., 2019; Fahrenkopf et al., 2008); and on various scales (Shanafelt et al., 2023; Dyrbye et al., 2018). However, these varied approaches prevent meaningful comparison and synthesis of findings (Bautista et al., 2023), thereby hindering improvement (Dyrbye et al., 2018).

Limited Datasets

Current datasets and models of health workforce burnout and well-being lack applicability across the healthcare system (CAHS, 2023). Furthermore, most datasets narrowly focus on a few factors of well-being or burnout, overlooking, for example, the social and physical environment and demographic characteristics (CAHS, 2023; Health Canada, 2022) or rely solely on quantitative or qualitative data (CAHS, 2023).

Short-term Studies

Relatively few assessments of health workforce well-being and burnout are longitudinal (e.g., DiLalla et al., 2024; Eley et al., 2022; Mata et al., 2015; Mayer et al., 2023; West et al., 2011). Most studies are cross-sectional, providing a snapshot of the current state without examining how these experiences evolve over time. More longitudinal research is needed to understand how burnout develops, persists, or resolves in response to various interventions in work and learning environments (CMA, 2018; Brazeau et al., 2014; Shanafelt et al., 2023).

Underrepresentation of Diverse Groups

Research on burnout and well-being often lacks sufficient focus on diverse subgroups within the health workforce, such as individuals with disabilities or those who identify as 2SLGBTQ+ (CAHS, 2023; Merry

et al., 2021). This underrepresentation can lead to a one-size-fits-all approach in interventions, which may not address the specific needs and challenges faced by these groups.

Insufficient Evaluation of Interventions

There is a lack of rigorous evaluation of interventions designed to reduce burnout and improve well-being (Fahrenkopf et al., 2008). Many studies fail to assess the long-term impact of these interventions and/or apply the interventions in a particular setting (e.g., HEC 2024a; 2024b; 2024c; 2024d; 2024e; 2024f; 2024g; 2024h). There is often limited consideration of how interventions can be adapted to different healthcare settings or professional roles.

Lack of Canadian Research

Research on health workforce well-being in Canada is sparse (CMA, 2018). Less than half (41%) of the sources in this review were based in the Canadian context. The CAHS' more extensive systematic review also noted the paucity of national research, with less than 3% of the research reviewed from Canada (2023). Canada's unique healthcare systems and priorities demand more context-specific, actionable research on the health workforce (CAHS, 2023; Health Canada, 2022).

4.7.2 Strategies to Address Gaps in Measurement, Assessment, and Research

Standardization of Well-being and Burnout Metrics

To address inconsistencies in burnout and composite well-being measurements, organizations can develop and adopt a standardized conceptual framework of burnout (e.g., WHO, 2022a), well-being (Bautista et al.; Dyrbye et al., 2018), and their proxies (Strauss et al., 2016) that relies on validated measurement tools (Cook & Beckman, 2006; Do et al., 2023; Dyrbye et al., 2018; NAM, 2024b). These metrics should be comprehensive to capture the multiple dimensions of well-being, such as physical, emotional, mental, and social health, and should be applicable to different healthcare roles and settings (CAHS, 2023; Dyrbye et al., 2018; NAM, 2024b; OUSSG, 2022).

Comprehensive and Multidimensional Datasets

Organizations should collect comprehensive data on well-being and burnout in relation to other demographic, social, and environmental factors to capture the state of the health workforce, align health system priorities, and inform workforce planning (CAHS, 2023; Health Canada, 2022). Collaboration within and across jurisdictions will expand the availability and actionability of existing data (CAHS, 2023; WHO, 2022b).

Expansion of Longitudinal Research

To better understand the trajectory of workforce burnout, organizations can fund and support more longitudinal studies that track health workers over time. These studies should examine how burnout develops and changes in response to different interventions, workplace conditions, and personal factors (Brazeau et al., 2014; Shanafelt et al., 2023).

Inclusion of Diverse Populations in Research

Organizations should ensure interventions are inclusive and effective for all groups by including diverse populations in research strategies and ensuring these groups govern how their data is applied (CAHS, 2023; Health Canada, 2022). This includes considering the unique experiences of specific groups and the experiences of individuals at the intersection of multiple identities (Kassam et al., 2024).

Rigorous Evaluation of Interventions

To assess the effectiveness of well-being and burnout interventions, organizations should implement rigorous evaluation frameworks. These evaluations should not only measure immediate outcomes but also consider long-term impacts and the adaptability of interventions across different contexts. Additionally, interventions should be monitored to analyze trends in usage, experience, and impact (Health Canada, 2023). Organizations can begin by adopting models and leading practices that have proven successful in the short-term or limited settings (HEC 2024a; 2024b; 2024c; 2024d; 2024e; 2024f; 2024g; 2024h) and test them in larger, team-based models of care over longer periods (Health Canada, 2022; OUSSG, 2022).

Expand National Research

Investing in more research on health workforce well-being, burnout, and related metrics, specifically in Canada, is recommended (CAHS, 2023). Organizations should consider implementing a Canada-wide data collection approach that can integrate existing data, standardize it for wide application in interventions, and inform workforce planning (Casey, 2023; Health Canada, 2022; HealthCareCAN, 2022).

5. Implications for NPHWW

5.1 Applicability of strategic priorities within the Canadian context

In 2022, the National Plan for Health Workforce Well-Being (National Plan) in the United States was released with the intent to strengthen the American health workforce's well-being and improve population health. Broadly, this National Plan identifies existing challenges in their health workforce and then proposes strategies to address immediate and long-term needs and mitigate risks (NAM, 2024). Modelled the priorities identified in the National Plan, six priority areas were identified for the NPHWW in Canada. This work validates that the priorities for the NPHWW are relevant and appropriate within the Canadian context.

Overall, the literature included in this review supports the adoption and prioritization of the strategic priorities identified for the NPHWW. Three notable exceptions were identified. First, the strategic priority of "Institutionalizing and Investing in Well-Being as a Long-Term Value" in the National Plan was heavily focused on recovery efforts related to COVID-19 and did not include the term 'invest.' Because the NPHWW will be released five years after the WHO downgraded the COVID-19 pandemic from a public health emergency, the NAM conceptualization of the construct may no longer be as relevant. Instead, it

may be worthwhile to direct efforts toward developing systems that are resilient and safeguarding against future public health emergencies and other events that may pose a risk to the health system, such as disruptions influenced by climate change. Additionally, we recommend adding the term 'invest' to emphasize that institutionalizing well-being requires organizations to provide financial support for interventions, ensuring their timely implementation and long-term sustainability. As such, the strategic priority of “Institutionalizing and Investing in Well-Being as a Long-Term Value” was defined as “Address systemic issues that inhibit worker well-being to create sustainable public health and health systems that are resilient and responsive now and into the future.”

Some construct overlap in the National Plan’s conceptualizations of the two priority areas: “Create and Sustain Positive Work and Learning Environments” and “Institutionalize and Invest in Well-Being as a Long-Term Value” was also identified. Namely, the idea of optimizing work environments to foster well-being was captured in both priority areas. Construct overlap is troublesome because it can complicate the interpretation of results and findings and make it difficult to describe and differentiate between each priority area accurately. Further, distinct constructs ensure that each priority area can be accurately measured and evaluated, leading to more meaningful research outcomes.

This work considered the Socio-Ecological Model (SEM) to help delineate boundary conditions for each priority area (Bronfenbrenner, 1994). “Create and Sustain Positive Work and Learning Environments” was revised to centre on individual and interpersonal facets of well-being. At the same time, “Institutionalize and Invest in Well-Being as a Long-Term Value” is concentrated more so on organizational and systemic factors related to well-being. Thus, “Create and Sustain Positive Work and Learning Environments” was defined as “Prioritizing, investing in, and developing individual and interpersonal factors that optimize learning, foster professional well-being, and support quality care.”

Relatedly, construct overlap was also identified in the National Plan’s conceptualization of the priority area “Invest in Measurement, Assessment, Strategies and Research.” Specifically, the National Plan called for expanding the communication of existing strategies for the purpose of driving positive change. Given that the other priority areas provide the strategies that would be communicated, addressing this aspect of the priority area introduced too much repetition to be meaningful. As such, “strategies” was removed from the priority area, which is now “Invest in Measurement, Assessment and Research,” and the strategies were evaluated in the context of the priority area they related to.

5.2 Cross-cutting Themes in the Evidence

While the scope of this literature review is large and touches on several different subject areas, several cross-cutting themes emerged that are relevant to all priority areas.

Overcome limitations in evidence by using adaptive and developmental evaluation approaches to support innovation and experimentation.

Current datasets and models of health workforce burnout and well-being may lack direct applicability across the healthcare system (CAHS, 2023). Relatively few assessments of health workforce well-being and burnout are longitudinal (e.g., DiLalla et al., 2010; Eley et al., 2022; Mata et al., 2015; Mayer et al., 2023; West et al., 2011), and there is a lack of rigorous evaluation of interventions designed to reduce

burnout and improve well-being (Fahrenkopf et al., 2008) and research on health workforce well-being in Canada (CMA, 2018). Further, many datasets are quite narrow in that they focus on a few indicators and specific populations (CAHS, 2023). To address these limitations, it is suggested that the NPHWW Working Groups consider the practice of rapid iterative experimentation (Shanfelt et al., 2021). Rather than design a program and pursue widespread implementation, organizations should pursue an iterative experimental approach to pilot programs to evaluate their relevance and efficacy to refine interventions to relevant contexts and systems (Shanafelt et al., 2020).

Establish relevant metrics and goals to ensure well-being is a priority.

All interventions and strategies should be underpinned by reliable processes for understanding effect and impact. This ensures accountability and elevates well-being as a priority at all leadership levels (Shanafelt & Larson, 2023). Longitudinally assessing progress related to specific goals will also result in more progress, regardless of the intervention type or priority area (Shanafelt et al., 2023). Assessments should occur at regular intervals.

Organization-directed interventions are more effective compared to individual-directed approaches.

While individual strategies can be beneficial and contribute to larger organizational efforts, they alone are insufficient (CAHS, 2023; DeSimone et al., 2019). Individuals' capacity to independently pursue well-being support is limited. Future interventions should integrate person-level approaches within system-level solutions to address concerns effectively (Khan et al., 2021).

Integrate diverse leaders into decision-making roles to increase representation and address systemic barriers.

While different subgroups within the health workforce face unique challenges (CAHS, 2023; Casey, 2023), increasing representation, especially in leadership roles, ensures that strategies and data collection (Health Canada, 2022) are informed by those directly impacted (CAHS, 2023).

6. References

Alkhawaldeh, J. F. M., Khawaldeh, M. A., Mrayyan, M. T., Yehia, D., Shudifat, R. M., Anshasi, H. A., ... & Aqel, A. (2024). The efficacy of mindfulness-based programs in reducing anxiety among nurses in hospital settings: A systematic review. *Worldviews on Evidence-Based Nursing 21*(4), 395–406. https://doi.org/10.1111/wvn.12722

Arslan, F., Marcus, J., Khatami, A., Guergachi, A., & Keshavjee, K. (2024). Towards a regulatory framework for workflow improvement in electronic medical records. In *The Role of Digital Health Policy and Leadership* (pp. 54–58). IOS Press.

Asch, S. M., Atkins, D. V., & Walling, A. (2021). If kindness were a drug, the FDA would approve it. *Journal of General Internal Medicine*, *36*(2), 263–264. https://doi.org/10.1007/s11606-020-06343-7

Bautista, T. G., Roman, G., Khan, M., Lee, M., Sahbaz, S., Duthely, L. M., Knippenberg, A., Macias-Burgos, M. A., Davidson, A., Scaramutti, C., Gabrilove, J., Pusek, S., Mehta, D., & Bredella, M. A. (n.d.). What is well-being? A scoping review of the conceptual and operational definitions of occupational well-being. *Journal of Clinical and Translational Science, 7*(1), e227. htpps://doi.org/10.1017/cts.2023.648

Billick, M., Rassos, J., & Ginsburg, S. (2022). Dressing the part: Gender differences in residents' experiences of feedback in internal medicine. *Academic Medicine, 97*(3), 406. htpps://doi.org/10.1097/ACM.0000000000004487

Brazeau, C. M. L. R., Shanafelt, T., Durning, S. J., Massie, F. S., Eacker, A., Moutier, C., Satele, D. V., Sloan, J. A., & Dyrbye, L. N. (2014). Distress among matriculating medical students relative to the general population. *Academic Medicine*, *89*(11), 1520. htpps://doi.org/10.1097/ACM.0000000000000482

Brooks, S. K., Weston, D., & Greenberg, N. (2020). Psychological impact of infectious disease outbreaks on pregnant women: rapid evidence review. *Public health*, pp. *189*, 26–36. https://doi.org/10.1016/j.puhe.2020.09.006

Bronfenbrenner, U. (1994). Ecological models of human development. International encyclopedia of education, 3(2), 37-43.

Bulk, L. Y., Tikhonova, J., Gagnon, J. M., Battalova, A., Mayer, Y., Krupa, T., Lee, M., Nimmon, L., & Jarus, T. (2020). Disabled healthcare professionals' diverse, embodied, and socially embedded experiences. *Advances in Health Sciences Education, 25*(1), 111–129. htpps://doi.org/10.1007/s10459-019-09912-6

Burns, K. E. A., Pattani, R., Lorens, E., Straus, S. E., & Hawker, G. A. (2021). The impact of organizational culture on professional fulfillment and burnout in an academic department of medicine. *PLoS ONE*, *16*(6), e0252778. htpps://doi.org/10.1371/journal.pone.0252778

Bynum, W. (2018, August 2). Narrowing the Vulnerability Gap. *Duke Department of Family Medicine and Community Health*. https://fmch.duke.edu/blog/will-bynum-md-narrowing-vulnerability-gap

Canadian Academy of Health Sciences. (2023.). *Canada's health workforce: Pathways forward.* https://cahs-acss.ca/wp-content/uploads/2023/04/CAHS-Health-Workforce-Pathways-Forward-EN_Final_Apr-4.pdf

Canadian Institute for Health Information. (2023, June 8). *Commonwealth Fund survey, 2022.* https://www.cihi.ca/en/commonwealth-fund-survey-2022

Canadian Institute for Health Information. (2024a). *The state of the health workforce in Canada, 2022*. https://www.cihi.ca/en/the-state-of-the-health-workforce-in-canada-2022

Canadian Institute for Health Information. (2024b). *Tracking workplace measures*. https://www.cihi.ca/en/the-state-of-the-health-workforce-in-canada-2022/tracking-workplace-measures

Canadian Medical Association. (2018). *CMA 2018 national physician health survey*. https://digitallibrary.cma.ca/link/digitallibrary18

Canadian Medical Association. (2020). *Empathy in medicine*. https://www.cma.ca/physician-wellness-hub/content/empathy-medicine

Canadian Medical Association. (2022). *CMA 2021 national physician health survey*. https://digitallibrary.cma.ca/media/Digital_Library_PDF/2021%20NPHS%20report%20EN.pdf

Casey, S. (2023). *Addressing Canada's health workforce crisis: Report of the standing committee on health. House of Commons Canada*, 44th Parliament, 1st session. House of Commons Canada. https://www.ourcommons.ca/Content/Committee/441/HESA/Reports/RP12260300/hesarp10/hesarp10-e.pdf

Compton-McBride, S., Reed, A., McGuire, K., Andrews, A., & Liesveld, J. (2023). Better Together: Collaboration to Enhance the Nursing Workforce. *Nursing Administration Quarterly, 47*(4), 329–337.

Cook, D. A., & Beckman, T. J. (2006). Current concepts in validity and reliability for psychometric instruments: Theory and application. *The American Journal of Medicine, 119*(2), 166.e7-166.e16. htpps://doi.org/10.1016/j.amjmed.2005.10.036

DeChant, P. F., Acs, A., Rhee, K. B., Boulanger, T. S., Snowdon, J. L., Tutty, M. A., Sinsky, C. A., & Thomas Craig, K. J. (2019). Effect of organization-directed workplace interventions on physician burnout: A systematic review. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*, *3*(4), 384–408. htpps://doi.org/10.1016/j.mayocpiqo.2019.07.006

DeSimone, S., Vargas, M., & Servillo, G. (2021). Organizational strategies to reduce physician burnout: A systematic review and meta-analysis. *Aging Clinical and Experimental Research*, *33*(4), 883–894. htpps://doi.org/10.1007/s40520-019-01368-3

Dextras-Gauthier, J., Gilbert, M.-H., Dima, J., & Adou, L. B. (2023). Organizational culture and leadership behaviours: Is manager's psychological health the missing piece? *Frontiers in Psychology*, 14. htpps://doi.org/10.3389/fpsyg.2023.1237775

DiLalla, L. F., Hull, S. K., & Dorsey, J. K. (2004). Effect of gender, age, and relevant course work on attitudes toward empathy, patient spirituality, and physician wellness. *Teaching and Learning in Medicine. 16*(2), 165–170. htpps://doi.org/10.1207/s15328015tlm1602_8

Do, V., Lewis, M., Goldstein, C., & Sonnenberg, L. K. (2023). Fostering a health-promoting learning environment in medical education: Adapting the Okanagan Charter for administrators and medical educators. *Academic Medicine, 98*(6), 672. htpps://doi.org/10.1097/ACM.0000000000005159

Doctors Manitoba. (2024a). *Joint task force to reduce administrative burdens for physicians progress report #1.* https://assets.doctorsmanitoba.ca/documents/Admin-Burden-Progress-Report-May-30.pdf

Doctors Manitoba. (2024b). *Joint task force to reduce administrative burdens for physician: Progress report #2*. https://assets.doctorsmanitoba.ca/documents/ABTF-Progress-Report-Feb-2024.pdf

DPRA Canada. (2024). *Annotated Bibliography: National Plan for Health Workforce Well-being*.

Drummond, D., & Jones, D. (2023). Improving access to primary healthcare. *Intelligence Memos.* CD Howe Institute. https://www.cdhowe.org/sites/default/files/2023-06/IM-Drummond%20and%20Jones_2023_0629.pdf

Duong, D., & Vogel, L. (2023). Overworked health workers are "past the point of exhaustion". *Canadian Medical Association Journal, 195*(8), E309–E310. htpps://doi.org/10.1503/cmaj.1096042

Dyrbye, L. N., Major-Elechi, B., Hays, J. T., Fraser, C. H., Buskirk, S. J., & West, C. P. (2020). Relationship between organizational leadership and health care employee burnout and satisfaction. *Mayo Clinic Proceedings*, *95*(4), 698–708. htpps://doi.org/10.1016/j.mayocp.2019.10.041

Dyrbye, L. N., Massie, F. S., Eacker, A., Harper, W., Power, D., Durning, S. J., Thomas, M. R., Moutier, C., Satele, D., Sloan, J., & Shanafelt, T. D. (2010). Relationship between burnout and professional conduct and attitudes among us medical students. *JAMA*, *304*(11), 1173–1180. htpps://doi.org/10.1016/j.mayocp.2019.10.041

Dyrbye, L. N., Meyers, D., Ripp, J., Dalal, N., Bird, S. B., & Sen, S. (2018). A pragmatic approach for organizations to measure health care professional well-being. *NAM Perspectives.* htpps://doi.org/10.31478/201810b

Eckerson, C. M. (2018). The impact of nurse residency programs in the United States on improving retention and satisfaction of new nurse hires: An evidence-based literature review. *Nurse Education Today, pp. 71*, 84–90. https://doi.org/10.1016/j.nedt.2018.09.003

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350–383. https://doi.org/10.2307/2666999

Eley, D. S., Leung, J., & Cloninger, K. M. (2022). A longitudinal cohort study observed increasing perfectionism and declining resilience, ambiguity tolerance and calling during medical school, which is not explained by student personality. *BMC Medical Education*, *22*(1), 784. htpps://doi.org/10.1186/s12909-022-03850-5

Fahrenkopf, A. M., Sectish, T. C., Barger, L. K., Sharek, P. J., Lewin, D., Chiang, V. W., Edwards, S., Wiedermann, B. L., & Landrigan, C. P. (2008). Rates of medication errors among depressed and burnt out residents: Prospective cohort study. *BMJ, 336*(7642), 488–491. htpps://doi.org/10.1136/bmj.39469.763218.BE

Gaudreau, P., Schellenberg, B. J. I., Gareau, A., Kljajic, K., & Manoni-Millar, S. (2022). Because excellencism is more than good enough: On the need to distinguish the pursuit of excellence from the pursuit of perfection. *Journal of Personality and Social Psychology, 122*(6), 1117–1145. htpps://doi.org/10.1037/pspp0000411

Health Canada. (2022). *Report of the health human resources symposium.* Government of Canada. https://www.canada.ca/en/health-canada/services/health-care-system/health-human-resources/summary-report-symposium.html

Health Canada. (2023). *Nursing retention toolkit: Improving the working lives of nurses in Canada.* Government of Canada. https://www.canada.ca/content/dam/hc-sc/documents/services/health-care-system/health-human-resources/nursing-retention-toolkit-improving-working-lives-nurses/nursing-retention-toolkit-improving-working-lives-nurses.pdf

Healthcare Excellence Canada (HEC). (2024a). Basic radiological technician program provides specialized training for x-ray procedures across Nunavut. *Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/5adkd34v/20230224_basic-radiological-technician-program-provides-specialized-training-for-x-ray-procedures-across-nunavut.pdf

Healthcare Excellence Canada (HEC). (2024b). Creating a meaningful work-life balance for the staff of Churchill Health Centre. *Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/tnjasluk/20230214_creating-a-meaningful-work-life-balance-for-staff-of-churchill-health-centre.pdf

Healthcare Excellence Canada (HEC). (2024c). Implementing a physician assistant program to promote retention within Ongomiizwin health services. *Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/wofdrciy/20230224_implementing-a-physician-assistant-program-to-promote-retention-within-ongomiizwin-health-services.pdf

Healthcare Excellence Canada (HEC). (2024d). Nursing practice council – An approach to engage and retain staff in Manitoba's Northern Health region. *Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/45xfzhnk/20230224_nursing-practice-council-an-approach-to-engage-and-retain-staff-in-manitoba-s-northern-health-region.pdf

Healthcare Excellence Canada (HEC). (2024e). Recruitment of permanent part-time physicians – A successful approach to long-term physician retention. *Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/gjmfas4d/20230214_recruitment-of-permanent-part-time-physicians-a-successful-approach-to-long-term-physician-retention.pdf

Healthcare Excellence Canada (HEC). (2024f). Roadmap to strengthen the Nunavut nursing workforce*. Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/u5afiyql/20230224_roadmap-to-strengthen-the-nunavut-nursing.pdf

Healthcare Excellence Canada (HEC). (2024g). The triad leadership model within Island Health: Enhanced and culturally appropriate leadership structures. *Promising Practice Summaries.* https://www.healthcareexcellence.ca/media/spxlwdyn/20230214_the-triad-leadership-model-within-island-health-enhanced-and-culturally-appropriate-leadership-structures.pdf

Healthcare Excellence Canada (HEC). (2024h). Virtual triage: An approach to supporting on-call community health nurses. *Promising Practice Summaries*. https://www.healthcareexcellence.ca/media/tjhmva51/20230214_virtual-triage-an-approach-to-supporting-on-call-community-health-nurses.pdf

HealthCareCAN. (2022). Strengthening the foundation of healthcare in Canada: Actions to shore up healthcare and health research in Canada. https://www.HealthCareCAN.ca/our-work/bolster-canadas-health-workforce/

Hill, A., & Curran, T. (2015). Multidimensional perfectionism and burnout: A meta-analysis. *Personality and Social Psychology Review*, 20. htpps://doi.org/10.1177/1088868315596286

International Conference on Health Promoting Universities & Colleges (7th: 2015: Kelowna, B.C.). (2015). *Okanagan Charter: An international charter for health-promoting universities & colleges*.

Itchhaporia, D. (2021). The evolution of the Quintuple Aim. *Journal of the American College of Cardiology*, *78*(22), 2262–2264. htpps://doi.org/10.1016/j.jacc.2021.10.018

Karnieli-Miller, O., Taylor, A. C., Cottingham, A. H., Inui, T. S., Vu, T. R., & Frankel, R. M. (2010). Exploring the meaning of respect in medical student education: an analysis of student narratives*. Journal of General Internal Medicine*, *25*(12), 1309–1314. htpps://doi.org/10.1007/s11606-010-1471-1

Kassam, A., Antepim, B., & Sukhera, J. (2024). A mixed methods study of perceptions of mental illness and self-disclosure of mental illness among medical learners. *Perspectives on Medical Education*, *13*(1), 336–348. htpps://doi.org/ 0.5334/pme.1152

Kelm, Z., Womer, J., Walter, J. K., & Feudtner, C. (2014). Interventions to cultivate physician empathy: A systematic review. *BMC Medical Education*, *14*(1), 219. htpps://doi.org/10.1186/1472-6920-14-219

Khan, N., Palepu, A., Dodek, P., Salmon, A., Leitch, H., Ruzycki, S., Townson, A., & Lacaille, D. (2021). Cross-sectional survey on physician burnout during the COVID-19 pandemic in Vancouver, Canada: The role of gender, ethnicity and sexual orientation. *BMJ Open*, 11(5), e050380. htpps://doi.org/10.1136/bmjopen-2021-050380

Khatami, A., Marcus, J., Arslan, F., Guergachi, A., & Keshavjee, K. (2024). Towards a regulatory framework for electronic medical record interoperability in Canada. In the role of digital health policy and leadership. *Studies in Health Technology and Informatics*, 59–63. htpps://doi.org/10.3233/SHTI231312

Leape, L. L., Shore, M. F., Dienstag, J. L., Mayer, R. J., Edgman-Levitan, S., Meyer, G. S., & Healy, G. B. (2012). Perspective: A culture of respect, part 1: the nature and causes of disrespectful behaviour by physicians. *Academic Medicine*, *87*(7), 845. htpps://doi.org/ 0.1097/ACM.0b013e318258338d

Mackay, M.-C., Gilbert, M.-H., Fournier, P.-S., Dextras-Gauthier, J., & Boucher, F. (2022). Management behaviours during the COVID-19 pandemic: The case of healthcare middle managers. *Frontiers in Psychology*, *13*. htpps://doi.org/10.3389/fpsyg.2022.986980

Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, *15*(2), 103–111. htpps://doi.org/10.1002/wps.20311

Mata, D. A., Ramos, M. A., Bansal, N., Khan, R., Guille, C., Di Angelantonio, E., & Sen, S. (2015). Prevalence of depression and depressive symptoms among resident physicians: A systematic review and meta-analysis. *JAMA*, 314(22), 2373–2383. htpps://doi.org/10.1001/jama.2015.15845

Mayer, Y., Shalev, M., Nimmon, L., Krupa, T., Bulk, L. Y., Battalova, A., Lee, M., & Jarus, T. (2023). Social support experiences of students and clinicians with disabilities in health professions. *Advances in Health Sciences Education*, *28*(2), 477–497. https://doi.org/10.1007/s10459-022-10169-9

Merry, L., Vissandjée, B., & Verville-Provencher, K. (2021). Challenges, coping responses and supportive interventions for international and migrant students in academic nursing programs in major host countries: A scoping review with a gender lens. *BMC Nursing,* 20(1), 174. htpps://doi.org/ 10.1186/s12912-021-00678-0

Murthy Vivek H. (2022). Confronting health worker burnout and well-being. *New England Journal of Medicine*, 387(7), 577–579. htpps://doi.org/10.1056/NEJMp2207252

National Academies of Medicine (2019). Taking action against clinician burnout: A systems approach to professional well-being. National Academies Press: Washington.

National Academies of Medicine. (2024a). *National plan for health workforce well-being*. Dzau, V. J., Kirch, D., Murthy, V., & Nasca, T. (Eds.). National Academies Press: Washington D.C.

National Academies of Medicine. (2024b). *Valid and reliable survey instruments to measure burnout, well-being, and other work-related dimensions.* https://nam.edu/valid-reliable-survey-instruments-measure-burnout-well-work-related-dimensions/

National Collaborating Centre for Indigenous Health. (2023). Indigenous cultural safety - an environmental scan of cultural safety initiatives in Canada: Chapter 2 - national-level cultural safety initiatives. https://www.nccih.ca/34/Publication.nccih?type=1&pillar=8

Niinihuhta, M., & Häggman-Laitila, A. (2022). A systematic review of the relationships between nurse leaders' leadership styles and nurses' work-related well-being. International Journal of Nursing Practice, 28(5), e13040.

Office of Regulatory Affairs and Service Effectiveness. (2024). *Patients before paperwork.* Government of Nova Scotia. https://beta.novascotia.ca/documents/reducing-red-tape-physicians-progress-report-may-2024

Office of the United States Surgeon General. (2022). *Addressing health worker burnout: The U.S. Surgeon General's advisory on building a thriving health workforce.* U.S. Department of Health and Human Services. https://www.hhs.gov/sites/default/files/health-worker-well-being-advisory.pdf

Olson, K. D. (2017). Physician burnout: A leading indicator of health system performance*? Mayo Clinic Proceedings*, *92*(11), 1608–1611. htpps://doi.org/10.1016/j.mayocp.2017.09.008

OurCare. (2023). *National survey findings: Summary report.* MAP Centre for Urban Health Solutions and St. Michaels Unity Health Toronto.

OurCare. (2024). *Primary care needs OurCare: The final report of the largest pan-Canadian conversation about primary care*. MAP Centre for Urban Health Solutions and St. Michaels Unity Health Toronto.

Ramachandran, S., Shayanfar, M., & Brondani, M. (2023). Stressors and mental health impacts of COVID-19 in dental students: A scoping review. *Journal of Dental Education, 87*(3), 326-342.

Razzetti, G. (2019, August 7). Why good enough is better than perfect: The simple psychological shift to free you from perfectionism. *Medium.* https://medium.com/personal-growth/good-enough-is-the-new-perfect-a0147ddd6d58

Rotenstein, L. S., Brown, R., Sinsky, C., & Linzer, M. (2023). The association of work overload with burnout and intent to leave the job across the healthcare workforce during COVID-19. *Journal of General Internal Medicine*, *38*(8), 1920–1927. https://doi.org/10.1007/s11606-023-08153-z

Schreiber, M., Ahmad, T., Scott, M., Imrie, K., & Razack, S. (2021). The case for a Canadian standard for 2SLGBTQIA+ medical education. *Canadian Medical Association Journal, 193*(16), E562–E565. htpps://doi.org/10.1503/cmaj.202642

Shanafelt, T. D. (2005). Finding meaning, balance, and personal satisfaction in the practice of oncology. *The Journal of Supportive Oncology*, *3*(2), 157–162, 164.

Shanafelt, T. D. (2021). Physician well-being 2.0: Where are we and where are we going? *Mayo Clinic Proceedings, 96*(10), 2682–2693. htpps://doi.org/10.1016/j.mayocp.2021.06.005

Shanafelt, T. D., & Noseworthy, J. H. (2017). Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. *Mayo Clinic Proceedings*, *92*(1), 129–146. htpps://doi.org/10.1016/j.mayocp.2016.10.004

Shanafelt, T. D., Gorringe, G., Menaker, R., Storz, K. A., Reeves, D., Buskirk, S. J., Sloan, J. A., & Swensen, S. J. (2015). Impact of organizational leadership on physician burnout and satisfaction. *Mayo Clinic Proceedings*, *90*(4), 432–440. htpps://doi.org/10.1016/j.mayocp.2015.01.012

Shanafelt, T. D., Larson, D., Bohman, B., Roberts, R., Trockel, M., Weinlander, E., Springer, J., Wang, H., Stolz, S., & Murphy, D. (2023). Organization-wide approaches to foster effective unit-level efforts to improve clinician well-being. *Mayo Clinic Proceedings*, *98*(1), 163–180. htpps://doi.org/10.1016/j.mayocp.2022.10.031

Shanafelt, T. D., Lightner, D. J., Conley, C. R., Petrou, S. P., Richardson, J. W., Schroeder, P. J., & Brown, W. A. (2017). An organization model to assist individual physicians, scientists, and senior health care administrators with personal and professional needs. *Mayo Clinic Proceedings*, *92*(11), 1688–1696. htpps://doi.org/10.1016/j.mayocp.2017.08.020

Shanafelt, T. D., West, C., Zhao, X., Novotny, P., Kolars, J., Habermann, T., & Sloan, J. (2005). Relationship between increased personal well-being and enhanced empathy among internal medicine residents. *Journal of General Internal Medicine*, *20*(7), 559–564. htpps://doi.org/10.1111/j.1525-1497.2005.0108.x

Shanafelt, T., Stolz, S., Springer, J., Murphy, D., Bohman, B., & Trockel, M. (2020). A blueprint for organizational strategies to promote the well-being of healthcare professionals. *NEJM Catalyst*, *1*(6). https://doi.org/10.1056/CAT.20.0266

Shapiro, D. E., Duquette, C., Abbott, L. M., Babineau, T., Pearl, A., & Haidet, P. (2019). Beyond burnout: A physician wellness hierarchy designed to prioritize interventions at the systems level. *American Journal of Medicine*, *132*(5), 556–563. htpps://doi.org/10.1016/j.amjmed.2018.11.028

Siad, F. M., & Rabi, D. M. (2021). Harassment in the field of medicine: cultural barriers to psychological safety. *CJC Open*, *3*(12), S174–S179. htpps://doi.org/10.1016/j.cjco.2021.08.018

Sinsky Christine A. & Panzer Jeffrey. (2022). The solution shop and the production line: The case for a frameshift for physician practices. *New England Journal of Medicine*, *386*(26), 2452–2453. htpps://doi.org/10.1056/NEJMp2202511

Sokol-Hessner, L., Folcarelli, P. H., Annas, C. L., Brown, S. M., Fernandez, L., Roche, S. D., Sarnoff Lee, B., Sands, K. E., Atlas, T., Benoit, D. D., Burke, G. F., Butler, T. P., Federico, F., Gandhi, T., Geller, G., Hickson, G. B., Hoying, C., Lee, T. H., Reynolds, M. E., … Turner, K. (2018). A road map for advancing the practice of respect in health care: the results of an interdisciplinary

modified Delphi consensus study. *The Joint Commission Journal on Quality and Patient Safety*, *44*(8), 463–476. htpps://doi.org/10.1016/j.jcjq.2018.02.003

Statistics Canada (2022, June 3). Experiences of healthcare workers during the COVID-19 pandemic, September to November 2021. *The Daily.* https://www150.statcan.gc.ca/n1/daily-quotidien/220603/dq220603a-eng.htm

Stephen Swensen MD, M. M. M., & Shanafelt, T. (2020). Mayo Clinic strategies to reduce burnout: 12 actions to create the ideal workplace. Oxford University Press.

Strauss, C., Lever Taylor, B., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion, and how can we measure it? A review of definitions and measures. *Clinical Psychology Review*, *47*, 15–27. htpps://doi.org/10.1016/j.cpr.2016.05.004

Thomas Craig, K. J., Willis, V. C., Gruen, D., Rhee, K., & Jackson, G. P. (2021). The burden of the digital environment: A systematic review on organization-directed workplace interventions to mitigate physician burnout. *Journal of the American Medical Informatics Association, 28*(5), 985–997. htpps://doi.org/10.1093/jamia/ocaa301

Thomas, M. R., Dyrbye, L. N., Huntington, J. L., Lawson, K. L., Novotny, P. J., Sloan, J. A., & Shanafelt, T. D. (2007). How do distress and well-being relate to medical student empathy? A multicenter study. *Journal of General Internal Medicine, 22*(2), 177–183. htpps://doi.org/10.1007/s11606-006-0039-6

Torralba, K. D., Jose, D., & Byrne, J. (2020). Psychological safety, the hidden curriculum, and ambiguity in medicine. Clinical Rheumatology, 39(3), 667–671. https://doi.org/10.1007/s10067-019-04889-4

Torralba, K. D., Loo, L. K., Byrne, J. M., Baz, S., Cannon, G. W., Keitz, S. A., Wicker, A. B., Henley, S. S., & Kashner, T. M. (2016). Does psychological safety impact the clinical learning environment for resident physicians? Results from the VA's learners' perceptions survey. *Journal of Graduate Medical Education*, *8*(5), 699–707. htpps://doi.org/10.1007/s10067-019-04889-4

Tsuji, S. R. J., Zuk, A. M., Solomon, A., Edwards-Wheesk, R., Ahmed, F., & Tsuji, L. J. S. (2023). What is well-being, and what is important for well-being? Indigenous voices from across Canada. *International Journal of Environmental Research and Public Health*, *20*(17), 6656. htpps://doi.org/10.3390/ijerph20176656

Truth and Reconciliation Commission of Canada. (2012). *Truth and Reconciliation Commission of Canada: Calls to Action.* https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf

United Nations. (2007). *United Nations Declaration on the Rights of Indigenous Peoples.* https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

Wallace, J. E., Lemaire, J. B., & Ghali, W. A. (2009). Physician wellness: A missing quality indicator. *The Lancet*, *374*(9702), 1714–1721. htpps://doi.org/10.1016/S0140-6736(09)61424-0

West, C. P., Shanafelt, T. D., & Kolars, J. C. (2011). Quality of life, burnout, educational debt, and medical knowledge among internal medicine residents. *JAMA*, *306*(9), 952–960. htpps://doi.org/10.1001/jama.2011.1247

West, C. P., Tan, A. D., Habermann, T. M., Sloan, J. A., & Shanafelt, T. D. (2009). Association of resident fatigue and distress with perceived medical errors. *JAMA*, 302(12), 1294–1300. htpps://doi.org/10.1001/jama.2009.1389

White, D. G., O'Brien, M. A., Cornacchi, S. D., Freeman, R., & Grunfeld, E. (2023). COVID-19: A qualitative analysis of academic family physician leaders' crisis response. *Family Medicine*, 55(1), 38–44. htpps://doi.org/10.22454/FamMed.55.421082

World Health Organization. (2021). Health promotion glossary of terms 2021. https://iris.who.int/bitstream/handle/10665/350161/9789240038349-eng.pdf

World Health Organization. (2022a). QD85: Burnout. *ICD-11: International Classification of Diseases (ICD): 11th Revision*. https://icd.who.int/browse/2024-01/mms/en#129180281

World Health Organization. (2022b). *Achieving well-being: A global framework for integrating well-being into public health utilizing a health promotion approach*. https://www.who.int/publications-detail-redirect/9789240084858

Yuan, J. H., Huang, Y., Rosgen, B. K., Donnelly, S., Lan, X., & Katz, S. J. (2023). Burnout and fatigue amongst internal medicine residents: A cross-sectional study on the impact of alternative scheduling models on resident wellness. PLOS ONE, 18(9), e0291457. https://doi.org/10.1371/journal.pone.0291457

DPRA®

Creative People. Smart Solutions.