

Investing in Canada's Nursing Workforce Post-Pandemic: A Call to Action

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An RSC Policy Briefing

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Land Acknowledgement

The headquarters of the Royal Society of Canada is located in Ottawa, the traditional and unceded territory of the Algonquin Nation.

The opinions expressed in this report are those of the authors and do not necessarily represent those of the Royal Society of Canada.

Background on the Policy Briefing Report Process

Established by the President of the Royal Society of Canada in April 2020, the RSC Task Force on COVID-19 was mandated to provide evidence-informed perspectives on major societal challenges in response to and recovery from COVID-19.

The Task Force established a series of Working Groups to rapidly develop Policy Briefings, with the objective of supporting policy makers with evidence to inform their decisions.

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Mandate and Scope

This report aims to identify and better understand factors that have contributed to longstanding nursing shortages in Canada and worldwide, and to develop recommendations to aid in preventing further attrition of Canadian nurses from point of care roles in the wake of the COVID-19 crisis.

Nurses represent the highest proportion of health care workers globally and play an instrumental role in health care which has been heightened in the ongoing fight against COVID-19. Health workforce data from 2020 indicates that there are upwards of 448,000 nurses across four roles: registered nurses, registered psychiatric nurses, licensed practical nurses/registered practical nurses, and nurse practitioners (Canadian Institute for Health Information [CIHI], 2021b). The response of nurses to the pandemic has been tremendous, with nurses taking on increased workloads, changing roles as necessary, and coming out of retirement to navigate an ever-changing and polarizing landscape. The pandemic has shed light on many vulnerabilities within the Canadian health care system. According to a Canadian Medical Association Journal news article published in 2021 (Varner, 2021), health job vacancies in Canada were at a record high of 100,300—up 56.9% from 2019 and with Canadian hospitals having the highest vacancy rate of any sector. In particular, the vulnerabilities, ineffectiveness and transient nature of policies and solutions of the past in addressing long-standing issues of nursing shortages in Canada have come to light during the COVID-19 pandemic. This has prompted our examination of what policy responses are urgently needed to support and retain our vital nursing resource moving forward.

High workload and stress are common themes associated with nursing profession and healthcare work in general. However, the COVID-19 pandemic has created such a substantial increase in workload and chronic stress that we are at a tipping point of systemic burnout. This could result in a mass departure of nurses from the profession if we fail to look for new solutions now. Available evidence indicates nurses are leaving their positions or intending to leave the profession entirely post-pandemic. Critically low nurse staffing levels are seen across the country, most notably in acute service areas, resulting in bed and service closures. Challenges with representation and diversity within the nursing profession continue to be magnified during the COVID-19 pandemic whereby underserved populations are disproportionately impacted; for example, racialized populations and populations in rural and remote regions have higher morbidity and mortality rates from COVID-19 (Webb Hooper et al., 2020; Wang & Tang, 2020). Issues pertaining to representation and diversity have implications for 1) the nursing profession 2) patient care 3) overall systemic operations including policies. These issues, combined with a projected global nursing workforce shortage, present serious concerns for health care systems already experiencing severe pressures.

This report examines the impact of COVID-19 on the nursing workforce, identifies factors influencing nurse turnover and shortages prior to and during COVID-19 especially with a lens on factors that are long-standing issues. To accomplish this, we have integrated various data, both primary and secondary sources, to explore the factors affecting nursing retention and turnover. We reviewed the following questions: (1) Why do nurses leave the profession and (2) What approaches have



been recommended or implemented to support and retain the nursing workforce? Our policy brief considers the profession of nursing to include Registered Nurses (RNs), Nurse Practitioners (NPs), Licensed Practical Nurses (LPNs)/ Registered Practical Nurses, Registered Psychiatric Nurses, and we have sought input from all nursing practice areas.

As described throughout this report, factors affecting nursing workforce retention and turnover are interrelated and complex, transcending multiple levels of influence—individual, relational, historical, organizational, cultural, and political. The authors acknowledge that the findings and recommendations presented in this review are within the defined scope, objectives, and methodology. This review is not meant to be a comprehensive assessment of all issues and considerations related to nursing workforce.

The intent of this work is to highlight key long-standing challenges and issues affecting the nursing workforce in Canada and including those that have emerged during the pandemic. This is an urgent call to action, as nursing is central to the health system’s capacity to respond to the COVID-19 pandemic, and more broadly to high quality and safe patient care. This call to action is also to support the wellbeing of all nurses in Canada for decades to come.

Key Messages from the Chair and Expert Group Members on the status of COVID-19 and the nursing workforce and the RSC opportunity

Message from Working Group Chair

“While the nursing labour market in Canada has been under stress for decades, the COVID-19 pandemic highlights critical areas within our health systems that continue to contribute to our inability to adequately plan for, recruit, retain and protect a pillar of our health system—our nursing workforce. Despite many ongoing challenges, nurses have demonstrated dedicated leadership in the pandemic response and many lessons have been learned.

“In this report, our esteemed panel of nursing experts in Canada has brought together many provincial, national, and international learnings to identify key areas we must consider for building a strong, national nursing workforce, as well as areas of weakness that have been highlighted by the COVID-19 pandemic. Addressing the gaps in systematic integrated planning and systemic issues that have chronically yielded nursing shortages and/or an environment in which nurses end up leaving, requires us to act in four policy areas, consistent with the WHO’s Strategic Directions for Nursing and Midwifery 2021-2025, namely, education, jobs, leadership, and service delivery.

“Advancing Canada’s response to ensuring a strong nursing workforce, can greatly benefit from recognizing the importance of global and regional strategies for strengthening our nursing workforce, the role nursing leaders play in leading quality improvement, utilizing the evidence and lessons from research and innovation for removing barriers, and how the health system benefits from strong nurse leaders, particularly when dealing with surges in health care, such as during the COVID pandemic.

“Establishing an integrated approach to planning for health care delivery and a health workforce that fully accounts for nursing, enables the system to better identify key strategies to address current and future nursing requirements.

“We would like to thank the Royal Society of Canada for this important opportunity, for their great support and guidance. We would also like to convey our sincere thanks to Dr. Tom Marrie for his

incredible guidance, ongoing support, and coaching. His partnership has been important to our success.” – *Dr. Gail Tomblin Murphy*

Messages from Expert Group Members

“Distinction-based health care recognizes the rights, nature, and lived experience of First Nations, Inuit, and Métis peoples (Government of Canada, 2021). Nurses in Canada recognize the challenge and barriers in accessing health care services and there is a need to reorient their focus on equity outcomes like authentic partnership with Indigenous leaders, organization, and communities to address anti-Indigenous racism in the healthcare system.” – *Dr. Lisa Bourque Bearskin*

“Our society has a moral obligation to care for those who care for all of us in our weakest and most vulnerable moments—when our health or that of our loved ones is threatened or fails. The call to action to support our nurses has never been clearer. While nurses are highly trained and skilled professionals whose knowledge, skill and caring are vital to our individual, community, and public health; especially now, these professionals need opportunities for mental health supports, rejuvenation, reasonable workloads and schedules, collaborative work environments, and time/resources to obtain advanced education. We must continue to grow our nursing leaders of tomorrow for clinical excellence, knowledge development and application, and for every health policy table and boardroom” – *Dr. Greta Cummings*

“For decades, we’ve analyzed, hypothesized and strategized on how best to respond to nursing shortages in Canada and globally, but widespread systemic change has not occurred. The COVID-19 pandemic has uncovered many seemingly startling but well-known factors impelling nurses to leave the profession—workload, burnout, lack of structural value, the need for leadership and mentorship, and lack of flexibility, autonomy and voice laced with overt racism, discrimination, and gendered inequities. With more than 400,000 nurses in Canada, health care in all its many forms is supported on the backs of nurses—those backs are tired and breaking. We are at a crisis point—nurses are re-evaluating meaning, purpose and how they are valued (or not) in the Canadian health care system. Without focused action at multiple levels, nurses will continue to leave the profession and the future of Canadian health care will be unstable and uncertain.” – *Dr. Annette Elliott Rose*

“It has been an honor to work with such accomplished nursing leaders, and I am hopeful that this report will contribute to the transformation necessary to foster and sustain an inclusive, socially just, and equitable Canadian nursing.” – *Dr. Josephine Etowa*

“Nursing human resources and staffing issues are not new; the COVID-19 pandemic has deepened and underscored a long-standing set of problems in the nursing workplace and nursing education. Past solutions to these issues, however, have generally fallen short. At least since the key formative periods of Medicare policy in Canada after World War II, nursing has lacked clear access to decision-making in the health care system. Unlike physician services, nursing under Medicare has been subsumed within institutional and provincial budgets. Without a clear voice in health system planning dedicated to ensuring good nursing policy, the profession has lacked the influence and authority needed to effectively problem solve in the interests of the public and patients. Nursing as a profession is a choice for the individual women and men who make up the nursing workforce. Nursing shortages during the pandemic reveal more clearly than ever the short and long-term consequences of a system that does not structurally value, measure, or prioritize nursing.

“On EDI: Policy interventions must begin with an integral focus on research and planning that will address EDI concerns, identify concrete recruitment, retention policies, and programs for affected groups, magnify voices and recruit new nursing leaders who can speak to diverse experiences, and rebuild relationships between Indigenous families, healers, and the health care system.” – **Dr. Esyllt Jones**

“March 11, 2020 marks the beginning of a long and challenging pandemic—Covid-19—that has stretched the nursing workforce to the limit. The shortage of nurses in Canada, which preceded the pandemic, has reached a crisis that is spiraling out of control. Throughout the past 23 months of this pandemic, healthcare workers across Ontario—especially nurses—have selflessly cared for Canadians while confronting fears for their own health and safety and that of their loved ones. They are exhausted and they are burnt out. They are leaving their jobs, and many have gone to work in the US, while some have left the profession altogether. This report is a call to action for all levels of governments, employers, associations, unions, educators, the media, and the public—invest in nurses to secure safe and quality patient care. Invest in nurses—and in particular on increasing the RN and NP workforce—to prevent a health system collapse.” – **Dr. Doris Grinspun**

“This report demonstrates the urgent need for action to attract and retain nurses through investment and nursing leadership to ensure patient safety. Nurses must influence policy and key decisions in our health care system.” – **Dr. Mélanie Lavoie-Tremblay**

“This is a nursing human resource crisis unlike any that we have experienced in my long career. The pre-existing stressors on nurses and other healthcare professionals were made worse by the pandemic because the system failed to listen to the workforce and apply the evidence available to create more humane and satisfying work environments. People choose to work in the health professions to be of human service and they seek to find meaning in their work. When the work becomes dehumanizing because of unrealistic workloads and lack of value and support, the meaning and professional satisfaction derived from the work are lost. No amount of money can make up for the anomie and moral distress experienced in these contexts.

We are on the cusp of a significant post pandemic shift in how people view and value work and its place in their lives—one that we have not seen for about a century. To successfully address the HHR challenge, leaders and employers must be able to re-envision and re-design the workplace to meet the needs of the people who provide service, as well as those who receive their care. Healthcare is a human service, a human resource intense activity. It stands or falls on its people.” – **Dr. Kathleen MacMillan**

“The RSC Report summarizes the research and evaluation that documents the longstanding recruitment and retention challenges that have relentlessly beleaguered the nursing profession for more than 20 years. It draws on international, national, and provincial evidence to paint a picture of the nursing profession that remains following the latest wave of the COVID-19 pandemic. The picture it portrays is one of exhaustion, fear, anger and demoralization. But there is also hope, splashes of light, optimism, resilience, and new ideas for a better future for healthcare in this province and country. The report is an inspiration and I look forward to collaborating with partners to build a better health care system for the people of this province and beyond. Nurses have always been essential to innovation and, discovery—but they have not always been welcomed to the tables where these transformations are created. The RSC Report makes it clear that needs to change—now” – **Dr. Ruth Martin-Misener**

“If we in Canada want to return to our global reputation for excellence in health care, we need to cease treating nurses as commodities, embrace the abundance of literature showing the benefits of employing and supporting sufficient numbers of well-prepared nurses, and permit them to work to their full scope of practice.” – *Dr. Judith Oulton*

“Thousands of pages will be written about Canada’s health human resources crisis following the COVID-19 pandemic. To strengthen our health workforce, including the nurses that are its backbone, governments will need to swiftly collaborate to build an aggressive retention and recruitment plan. Saying you support the research is not enough—nurses need action in every workplace.” – *Linda Silas*

“The COVID-19 pandemic experience has highlighted both the strength of Canada’s nursing workforce and also its fragility, in that for far too long it has been managed as if it is an unskilled workforce and an easily renewable resource. Nurses have played an enormous role in bringing the country through this difficult time, but at great cost, and we now see the impact of corporate health care management philosophies that undervalue the nursing contribution, and governments that fail to include a nursing perspective in their strategic priority planning. We need Pan-Canadian leadership, strategic partnerships, and coherent approaches to ensuring that high quality health care is available to all Canadians who need it, that we promote and protect the health of our society through a strong workforce of nursing professionals, and that the expert knowledge embedded in the nursing discipline finds its rightful place in health system decision making throughout our country.” – *Dr. Sally Thorne*

“If Canadian nursing today were a patient, then it would be like a trauma patient in trouble. One of the first things we do in emergency rooms is stop the bleeding. So, metaphorically yes, we need some stopgap, emergency interventions to stabilize nursing. You need to plug things up as best you can to lose as little blood as possible on the one hand, while at the same time pouring a lot more fuel into the body. But to extend the metaphor, there is no fridge full of packed cells—there is no nursing cavalry coming over the hill. The situation is grave, and we need to act fast. And as soon as we can build in at least some stability, it’s off to the operating room to fix the underlying causes of the bleeding. We *know* how to fix these problems; we’ve spent decades and hundreds of millions of dollars globally to amass evidence and solutions; what governments and employers must do is pay for the surgery and act! Act now! Phase three, recovery and rehabilitation, will be slow and tough. Nurses—mostly women of course—have been badly treated and nursing has been badly damaged by years of neglect. It’s going to take time to right-size that workforce and deploy Canada’s nurses, the best educated in the world, to deliver a 21st century scope of practice in modern, attractive practice settings that meet the needs of people, nurses, and health systems. We must intervene now, deeply, and over the long term.” – *Michael Villeneuve*

Definitions

BPSO Program: The Best Practice Spotlight Organization Program (BPSO@) designates organizations worldwide where frontline and executive nursing leaders successfully align their nursing strategic goals to improve the organization's patient outcomes, through evidence-based practices and robust staff engagement. The BPSO@ Program provides a roadmap to nursing excellence that benefits the whole of an organization. To nurses and the interprofessional team, BPSO@ designation means education and development through every career stage, using best practice guidelines and implementation science. BPSO champions lead change through social movement and knowledge to action approaches, driving with autonomy, positive work environments, and outcomes for staff, patients, organizations, and integrated health system of care (Registered Nurses' Association of Ontario [RNAO], n.d.-d; n.d.-g)

Distinction-based healthcare is a relational, rights-based approach that leverages the rights, nature, and lived experience of First Nations, Inuit, and Métis peoples. This approach recognizes the complex jurisdictional concerns to cocreate innovative health and wellness strategies that address anti-Indigenous racism in the healthcare system. A key principle of the Truth and Reconciliation Commission of Canada is co-developing distinctions-based Indigenous health legislation (Government of Canada, 2021).

Licensed Practical Nurse (LPN): Licensed practical nurses (LPNs) are health care professionals who work independently or in collaboration with other members of a health care team. LPNs assess clients and work in health promotion and illness prevention. They assess, plan, implement and evaluate care for clients. (HYPERLINK "<https://www.cihi.ca/en/licensed-practical-nurses>" CIHI, 2021a). Note: in Ontario, RPN refers to "Registered Practical Nurse," a term synonymous with LPN or "Licensed Practical Nurse" elsewhere in Canada.

Nurse: For this brief, the term nurse encompasses the regulated professions of registered nurses (RNs), nurse practitioners (NPs), licensed practical nurses (LPNs), and registered psychiatric nurses (RPNs).

Nurse Practitioner (NP): NPs are registered nurses who have additional education and nursing experience, which enables them to autonomously diagnose and treat illnesses, order, and interpret tests, prescribe medications, and perform medical procedures. NPs are also educators and researchers who can be consulted by other healthcare team members. (HYPERLINK "<https://cna-aicc.ca/en/nursing-practice/the-practice-of-nursing/advanced-nursing-practice/nurse-practitioners>" Canadian Nurses Association, n.d.-a)

Nursing shortage: In economic terms, a shortage occurs when there is a labor imbalance between the quantity of a skill (nursing) supplied to the workforce and the quantity demanded by users. Many indicators may be used to indicate a shortage such as vacancies, growth of workforce, turnover rates, population-based indicators, and overtime measures. It is suggested that a range of indicators are used to measure possible shortages (Zurn et al. 2004). Non-economic measures of shortages are often normative, such as a value judgement or professional determinations.

Registered Nurse (RN): RNs are self-regulated healthcare professionals who work autonomously and in collaboration with others to enable individuals, families, groups, communities, and populations to achieve their optimal levels of health. At all stages of life, in situations of health, illness, injury and disability, RNs deliver direct health-care services, coordinate care and support clients in managing their own health. RNs contribute to the healthcare system through their

leadership across a wide range of settings in practice, education, administration, research, and policy (Canadian Nurses Association, n.d.-b).

Registered Psychiatric Nurse (RPN): RPNs are autonomous professionals. They work collaboratively with clients and other health care team members to coordinate healthcare and provide client-centered services to individuals, families, groups, and communities. RPNs focus on mental developmental health and mental illness and addictions while integrating physical health care and utilizing bio-psycho-social and spiritual models for a holistic approach to care. The practice of psychiatric nursing occurs within the domains of direct practice, education, administration, and research. Currently in Canada the provinces of British Columbia, Alberta, Saskatchewan, and Manitoba regulate and educate psychiatric nurses as a profession distinct from Registered Nurses, Licensed Practical Nurses and Nurse Practitioners. Yukon Territory also regulates RPNs. (Registered Psychiatric Nurse Regulators of Canada, n.d.).

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Executive Summary

This rapid review investigated the evidence of nursing shortages and their causes in Canada during the pandemic and sought to identify effective policy and strategic solutions to address these shortages in the future. Nurses (Registered Nurses, Nurse Practitioners, Licensed and Registered Practical Nurses, and Registered Psychiatric Nurses) represent the highest proportion of health care workers globally and play an essential role in the ongoing fight against COVID-19. The response of nurses to the pandemic has been unprecedented. However, as the pandemic has shed light on multiple vulnerabilities within the Canadian health care system, it also has laid bare a range of nursing workforce issues that are longstanding and severe, and that they contribute to the critical nursing shortages impacting access for care.

The forthcoming review generates important evidence to support key recommendations to address current and longstanding nursing shortages and the growing nursing exodus in Canada. In brief, we have completed:

- A trend analysis of peer-reviewed articles and identified conditions that exacerbate leaving the profession, as well as factors which support retention of nurses.
- A scan of jurisdictional policies and strategies in Canada, Australia, the United States, and the United Kingdom that have been implemented or recommended for implementation.
- Qualitative analyses of surveys and interviews with frontline nurses pre- and during COVID-19, including a targeted case study from Nova Scotia and Saskatchewan.

We examined the following questions:

- Why are nurses leaving the profession?
- What approaches have been recommended or implemented to support and retain the nursing workforce?

The factors affecting nursing workforce retention are complex and multi-level in origin. This review was conducted to highlight recommendations to sustain the nursing workforce in Canada and to identify actionable strategies and policies that need immediate attention and action. This is an extraordinarily urgent issue for Canada's healthcare system and the Canadian population facing delays in their access to care.

1. A document analysis of academic literature and jurisdictional scan

Objective I: Identify evidence outlining the nursing exodus in Canada and internationally, during and pre-pandemic. Include evidence from surveys and qualitative interviews that have highlighted perspectives of nurses on this matter.

2. Key Informant Interviews

Objective II: Identify policies and strategies that have been implemented and/or recommended to address nursing shortages and the nursing exodus in Canada

3. Case Study: Interviews with nurses in Nova Scotia and Saskatchewan

Objective III: Examine the effectiveness of policies and strategies (as identified in method component 2) and report the experiences of nurses with policies and strategies, shortages, and the exodus from the profession.

Recommendations and Actions

The main objective of the review was to identify long-standing factors or issues affecting nursing shortages, retention and turnover including emerging issues related to the COVID-19 pandemic. They are not meant to be comprehensive and address all issues related to the nursing workforce.

Key actions presented below outline foundational and essential structures needed to implement and action the recommendations stemming from this report. Recommendations made in this review have been drawn from the findings of this review, which are bound by the stated scope, objectives and methodology adopted in this exercise.

Key Actions:

- **Establish a Pan-Canadian Nursing Human Resources Strategy**, with associated leadership to guide sustained efforts toward the recruitment and retention of a diverse nursing workforce.
- **Establish a National Nurse Engagement Taskforce** to engage point-of-care nurses in the development of planning and policy measures to enhance high-quality and safe working environments for nurses, and to mitigate impacts of current and future pandemics on the nursing workforce.
- **Establish a National Coalition of Nursing Experts and Leaders** to guide the production of rapid reviews and policy briefs to inform key nursing policy, planning and management actions, and to inform the development of a sustainable strategy to address ongoing needs related to recruitment, retention, and enhanced work environments for nurses.
- **Establish a distinction-based approach** to align nursing services with the United Nations Declaration on the Rights of Indigenous Peoples and Human Health Rights.

Recommendations

Recommendation 1: Develop a Pan-Canadian Nursing Human Resources Strategy with a sustained focus on strengthening recruitment and retention of the nursing workforce.

Our review has shown that factors affecting recruitment and retention of nurses, such as job dissatisfaction, job strain, burnout, and ability to provide quality care, are longstanding and have been exacerbated by the pandemic. Increasing demands that have emerged because of the COVID-19 pandemic, and the associated strain on resources, have contributed to increased pressure on nurses, with many leaving or intending to leave their roles within health systems. Sustained and integrated efforts to support the recruitment and retention of nurses must be coordinated at a national level working in partnership with provinces and territories to identify a suitable venue to support these efforts. Such a venue would leverage the benefits of coordinated knowledge mobilization and action, while ensuring the direct engagement with the provincial and territorial governments who would have jurisdiction over the implementation of the resulting strategy. Steps to fulfill this recommendation include the following: i) the development of an inclusive Pan-Canadian Nursing Human Resources Strategy; ii) the appointment of a Senior Nurse Leader to lead the development, operationalization and evaluation of the strategy; iii) the development of timely, comprehensive, and accessible nursing workforce data to support evidence-informed Health Human Resource planning and decision-making; and iii) the identification of a team of diverse nurses—with representation across all jurisdictions, roles, and sectors—to participate in

developing and implementing such a strategy in consultation with Indigenous, Black, Asian, and other communities, and in partnership with relevant provincial and territorial stakeholders.

We think recommendation 1 is foundational as a centralized structure is essential to sustain efforts working closely with provincial and territorial partners leverage existing structures such as the Provincial Nursing Network in Nova Scotia and similar councils / networks in other provinces and territories.

Recommendation 2: Address workload, staffing and skill mix, and payment models.

Our synthesis of jurisdictional surveys of Canadian nursing perspectives revealed high rates of *intentions to leave* that predate COVID-19 and have been exacerbated by the demands of the pandemic response. There is evidence that a high level of education and skill within the nursing team and safe staffing models are directly linked with safety and quality of patient care. Staffing, skill mix, and care delivery models must be designed based on patient complexity, acuity, stability, and predictability of outcomes, and flexible staffing models should be implemented where possible. Employers should also favour permanent employment relations and strive to provide nurses with competitive payment models that enable cross-country and cross-sectoral equity of salaries and benefits, while accounting for differences in cost of living across jurisdictions. EDI key performance indicators must be integrated at all levels of organizational planning, implementation, and evaluation. We recommend that a national strategy working in partnership with relevant provincial and territorial partners needs to be in place to ensure the success of sustained national efforts to retain nurses in Canada including the recruitment of Internationally Educated Nurses.

Recommendation 3: Strengthen the voice of nurses in policy and planning at multiple levels to promote the valuation of the nursing workforce.

A key finding of our review was the overwhelming perspective of nurses that they are undervalued. Nurses are remarkably underrepresented in planning and policy decisions. Nursing perspectives and expertise are critically important and need to be represented at planning and decision-making tables, spanning both clinical and policy spaces. We recommend systemic actions that ensure a robust nursing perspective is present at critical tables. This includes creating opportunities for front-line nurses to interact and voice their needs and concerns to organizational management and system stakeholders. We recommend the appointment of a Chief Nurse Officer at the federal level, and that structures and processes for nursing input into policy development be established at federal, provincial, and territorial levels. We recommend implementing collaborative mechanisms with federal and local union leadership, and nursing councils. Systemic efforts should also be made to bolster nurses' capacity to engage in these spaces by establishing processes for mentorship and supporting enhanced professional development of nurses across career stages. Efforts to increase nursing engagement in planning and decision-making processes should aim to recognize and value nurses' critical contribution to care delivery, leverage nurses' wealth of knowledge and expertise to develop solutions that address the key challenges they face at the point-of-care, support the overall well-being of nurses, and establish policies that adopt Indigenous and Equity, Diversity, and Inclusivity (EDI) lenses. The immediate resumption of conversations with First Nations, Inuit, and Metis organizations, and emphasizing racial equity and justice in strengthening the voice of nursing is also needed.

Recommendation 4: Enhance authentic intersectoral partnerships.

Strengthening the nursing workforce requires intersectoral partnerships, especially given the gaps in the availability of preceptors and mentors and retirement trends within nursing faculty. Partnerships and collaborative strategies that will advance education and professional development with employment focus are important. Key actions should include improved engagement between academic, health system, and government partners with the Canadian Association of Schools of Nursing. A distinction-based and EDI lens, adopted in consultation with Indigenous, Black, Asian, and other communities, should guide partnership development.

Recommendation 5: Address EDI, gender equity, and systemic racism and their impact on the workforce.

Our findings highlight the need to addressing equity, diversity, and inclusion in the workplace, in consultation with Indigenous, Black, Asian, and other communities. These efforts will require the development and implementation of key actions to address persistent sources of inequity within the nursing workforce, including gender inequity in healthcare and among all levels of nursing, inequities in compensation and ability to achieve work-life balance, and structural racism in the healthcare workplace. The development of policies to improve these conditions should be led by affected groups and individuals.

Recommendation 6: Implement safe workplace wellness strategies for our nurses.

COVID-19 has revealed many vulnerabilities in Canadian health systems that constrain the way we have supported and continue to support the nursing workforce. To stabilize the staffing crisis unfolding around us, we recommend urgent implementation of strategies to achieve safe staffing levels, enable flexible work arrangements, and establish safe and supportive working environments for nurses. Attending to the need to enhance the psychological safety of nursing work environments, we recommend nurses have better access to mental health care and supports.

Next steps for the review team:

A coalition of nursing leaders that came together to support this review will continue to lead and guide rapid reviews and policy briefs to inform planning, key policies, and actions and as a sustained strategy to address ongoing needs related to recruitment and retention, and enhanced work environments for nurses.

Summary of Key Findings

Directed Literature Review and Jurisdictional Scan Findings

- Government action tends to focus on education and recruitment and retention efforts, and not on system-level changes or workplace reform.
- Based on a network meta-analysis, a supportive work environment is the optimal recommendation to reduce voluntary turnover.
- A modification of nurses' workloads that creates a more realistic workload will boost job satisfaction and lessen fatigue, encouraging nurses to stay in the profession longer.
- Evidence strongly suggests highly developed leaders are needed to support nurses in the workforce, indicating a more stringent selection process should be employed when recruiting leaders and managers, including a focused attention to the development and

support of new nursing leadership from lower-income, newcomer, racialized, and Indigenous populations.

- The provision and retention of more experienced nurses is needed to provide more opportunities for junior and novice nurses to have more options in finding effective mentors (within and external to formal mentorship programs) that may in turn, support retention.
- Reviews of interventions indicate that a multi-pronged approach is more effective than single interventions and policies.
- Prior to COVID-19, the most frequently cited reasons for nursing shortages were job strain, role tension, work-family conflict, low job control, complexity, and quality of work environments. Factors that reduced nursing shortages and turnover included supportive and communicative leaders, team cohesiveness, positive organizational climate, organizational support/fit, job security, job satisfaction, individual commitment, and motivation.
- **COVID-19 Impact:** Recent literature which examines nursing shortages during COVID-19 found that existing factors that affected retention and recruitment of nurses (e.g., job dissatisfaction, job strain, burnout, ability to provide quality care) were exacerbated during the pandemic. Increasing demand during COVID-19 and strain on resources contributed to the increased pressure on nurses and the health system.

Expert Group Interviews

- Valuing the nursing workforce within the health system was important to key stakeholders. This may include recognizing the importance of nurse knowledge, skills, and expertise to both the clinical environment and to policy development and health system operation. Structural valuing on nurses also involves investment in the advancement of nurses in higher education and clinical and professional development opportunities.
- The following Pan-Canadian nursing and leadership strategies were also recommended: a) the need for objective, accurate health human resource data, and b) input and cooperation from key stakeholder groups including nurses to make a difference in policy and practice.

Case Study (Nova Scotia & Saskatchewan):

- Reasons for turnover as indicated by frontline nurses included mental and emotional wellbeing (high stress, workload, job strain), safety concerns due to staff and resource issues, poor work-life balance (vacation time not granted), and lack of manager support.
- Nurses indicated that external turnover of nurse colleagues included movement to less physically and emotionally demanding roles, early retirement, and travel nursing. Nurses indicated that internal movement of nurse colleagues included involuntary reassignment to high demand and short-staffed areas, and voluntary movement away from demanding specialties -long-term care (LTC), operating room (OR)-) or to casual roles with better working conditions and ability to take time off.
- Nurses had concerns about organizational policies and changes to policies were communicated.
- **COVID-19 Impact:** Nurses in Nova Scotia and Saskatchewan confirmed that turnover of nurses at their organizations is occurring during the COVID-19 pandemic.

Introduction

An Ongoing Crisis in Nursing

Long-standing issues within the nursing profession in Canada have led to shortages and turnover of nurses for several decades. For example, nurses in Canada report experiencing high stress and burnout on the job due to long hours and excessive overtime, ever-increasing workloads, workplace violence and harassment and exposure to potentially traumatic events (McGillis Hall & Reichert, 2020). Nurses report exposures to potentially psychologically traumatic events in the workplace, including severe human suffering, life-threatening illness or injury, and physical assault (Stelnicki et al., 2021). An online survey of 4267 Canadian nurses found that nearly half of respondents screened positive for a mental disorder (RNAO, 2017; RNAO, 2021d; Stelnicki & Carleton, 2021). Similarly, an online survey of 3969 Canadian nurses reported suicidal ideation (lifetime and in the previous 12 months) and suicide attempts higher than estimates in the general population (Stelnicki et al., 2020). In both surveys, more than 90% of respondents were women, reflecting the gender distribution of the Canadian nursing workforce and the gender disparity of mental health issues caused by nursing. Importantly, nurses who are Black, Indigenous, People of Colour (BIPOC), and 2S LGBTQIA+ are exposed to racism and discrimination in the workplace, as well as facing systemic discrimination and policies, which exclude or discourage their participation in positions of healthcare leadership. Such discrimination causes mental stress and psychological trauma for nurses, negatively impacting mental health (Baptiste, 2015; Eliason et al., 2011; Etowa et al., 2009; Jefferies et al., 2022; Likupe & Archibong, 2013). There are limited statistics about race and ethnicity collected by Canadian organizations and nursing colleges, which would provide necessary evidence about the nursing profession and inform anti-racist policies (Cooper-Brathwaite et al., 2022a, 2022b; Etowa et al., 2021; Oudshoorn, 2020; RNAO, 2020b; RNAO, 2022).

There is emerging evidence that substantially higher numbers of nurses than usual are leaving the profession or expressing an intent to leave or take early retirement post-pandemic. Various Canadian jurisdictions are reporting critically low nursing staffing levels resulting in bed and service closures and many are currently in crises planning mode to address these shortages. Combined with the pre-pandemic projected global nursing workforce shortage, this poses a serious concern for the Canadian healthcare system. In the fourth quarter of 2020, health sector job vacancies in Canada were at a record high of 100,300—up 56.9% from 2019. Canadian Hospitals had the highest job vacancy rate of any sector, with 15,700 more vacancies than in 2019. In Quebec, approximately 4000 nurses quit their role during the pandemic, a 43% increase from 2019 (Varner, 2021).

COVID-19 tested the capacity of our healthcare systems and put immense pressure on individual health professionals; pre-pandemic policies and organizational structures may have contributed to the current shortages and exodus of nurses from the profession—the exact scale and impact of which is not yet known. There is an urgent need to understand the factors contributing to longstanding nursing shortages in Canada and past waves of departure, to ensure the healthcare system can continue to respond effectively through the remainder of the pandemic and prevent a predicted mass exodus of nurses from the system post-pandemic.

COVID-19 and The Nursing Exodus

Along with inspiring stories of successful response through collaboration and innovation, the COVID-19 pandemic has exposed many vulnerabilities within our healthcare system. Morbidity and mortality rates are higher amongst marginalized and underserved populations (Abrams & Szeffler, 2020; Burstrom & Tao, 2020; McNeely et al., 2020), exacerbated by discriminatory policies and structures, making racism a public health issue (Godlee, 2020; Laurencin & Walker, 2020). Health professionals, including nurses, are experiencing crisis-levels of burnout and stress in unpredictable and unsatisfactory working conditions. There is a high risk of a post-pandemic mass exodus of nurses from point-of-care roles. Emerging evidence indicates that substantively higher numbers than usual are leaving the profession or expressing an intent to leave or take early retirement post-pandemic. Various Canadian jurisdictions are reporting critically low staffing levels resulting in bed and service closures, with many in crisis-planning mode to address these shortages (Canadian Federation of Nurses Unions, 2021; RNAO, 2021g; Rusnell, 2021). Combined with the projected global nursing workforce shortage, this is a serious concern (International Council of Nurses, 2021).

This impending crisis is evidenced from Canadian nurses' response to a survey by The Canadian Federation of Nurses Union (2020). The survey of 7153 nursing professionals across Canada found that intent to leave was substantially higher in the current study with over half of participants planning to leave their position in the next year. Of these, the majority plan to seek another nursing role, while a quarter intend to seek work outside of the nursing profession completely. Similarly, a survey of over 2000 Ontario nurses found that 13% of RNs aged 26-35, and nearly 1 in 20 nurses overall, reported they were very likely to leave the profession after the pandemic (RNAO, 2021d). We do not know what percentage of nurses who were likely to leave the profession are BIPOC as data in this area is limited. Comparing these findings to a previous international study, which reported that less than 20% of the Canadian nurse respondents were planning to leave work in the upcoming year, the effects of the pandemic are clear.

Internationally, evidence briefs from the International Council of Nurses (2020) reported that approximately 90% of nurses are somewhat or extremely concerned with their burnout, resourcing, and stress related to the pandemic. The evidence brief showed an increase in intention to leave the workforce after this year compared to previous years. Additionally, 20% of national nursing associations worldwide reported an increase in nurses leaving the profession in 2020 as well as an increase in intention to leave. Given that over 90% of nurses in Canada are women, it is important to review this rising trend with a lens of gender equity. To address the shortage by 2030 in all countries, the World Health Organization suggests the total number of nurse graduates would need to increase by 8% per year on average, alongside an improved capacity to employ and retain these graduates. A key limiting factor that needs to be considered concurrently is the increasing shortage of faculty, supervisors, mentors, and preceptors to support clinical placements and supervision.

Current State of the Nursing Workforce in Canada

Health workforce data from 2020 indicates there are over 448,000 nurses in Canada across four roles: registered nurses, registered psychiatric nurses, licensed practical nurses, and nurse practitioners (CIHI, 2021b). There is strong evidence to show nurses in many roles are contributing to a high quality and safe patient care environment.

Table 1 reflects the skill mix of the nursing workforce across these roles.

Table 1. The skill mix of the nursing workforce across roles

Skill Mix of Nursing Workforce in 2020 (CIHI, 2021)		
Role	Headcount	Proportion of Nursing Workforce
Registered Nurse	304,558	67.98%
Registered Psychiatric Nurse	6,115	1.36%
Licensed Practical Nurse	130,710	29.17%
Nurse Practitioner	6,661	1.49%

As of 2020, 6,661 nurse practitioners licensed to practice in Canada. Nurse practitioner practice plays a critical role in care delivery across sectors, and has been associated with improved access to care, improved health outcomes, decreased health care costs, and the provision of comprehensive care to vulnerable and underserved populations (RNAO, 2021a). This profession has seen considerable growth over the last decade, displaying an average yearly growth rate of 9.7% between 2011 and 2020 (CIHI, 2021b). This level of growth is significantly higher than all other nursing roles, with the registered nurse workforce growing by 0.6% per year, the licensed practical nurse workforce growing by 3.7% per year, and the registered psychiatric nurse workforce growing by 1.3% per year over the same time (CIHI, 2021b). Despite this growth, nurse practitioners are underutilized. Work is required to optimize nurse practitioner skills and expand their scope of practice across sectors and jurisdictions to meet the health system’s need (RNAO, 2021a). Notably, there is considerable variation in the use and scope of practice of nurse practitioners across Canadian provinces and territories (CIHI, 2020). At the national level, Canada displays a nurse practitioner to population ratio of 15.5 nurse practitioners per 100,000 population at the provincial level; this ratio varies from a maximum of 47.8 nurse practitioners per 100,000 in the Northwest Territories and Nunavut, to a minimum of 7.7 nurse practitioners per 100,000 in Quebec (see Table 2 for full provincial breakdown). Furthermore, CIHI data also reveals that the scope of practice of nurse practitioners varies across jurisdictions (CIHI, 2020).

Table 2. The geographic distribution of the NP workforce in 2020

Geographic Distribution of the NP Workforce in 2020 (CIHI, 2021b)		
Jurisdiction	Number of NPs	NP per 100,000 Population
Canada	6,661	15.5
Newfoundland and Labrador	191	34.5
Prince Edward Island	49	26.8
Nova Scotia	220	20.5
New Brunswick	148	17.9
Quebec	686	7.7
Ontario	3,681	22.9
Manitoba	233	No data
Saskatchewan	240	16.7
Alberta	602	12.6
British Columbia	540	9.6
Yukon	14	34.3
Northwest Territories/Nunavut	57	47.8

CIHI data shows there are approximately 300,000 RNs working in Canada. Evidence suggests that RN care is linked to enhanced patient, organizational and fiscal outcomes. The province of Ontario has the highest LPN/RPN mix in Canada at 32.6 percent, while the rest of Canada has an LPN/RPN mix at 27.8 percent. Tables 3 and 4 describe the geographic distribution of Canada RN and LPN workforce, respectively.

Table 3. The geographic distribution of the RN workforce in 2020

Geographic Distribution of the RN Workforce in 2020 (CIHI, 2021b)		
Jurisdiction	RN Headcount	RN per 100,000 Population
Canada	304,558	661.6
Newfoundland and Labrador	5,835	981.5
Prince Edward Island	1,707	890.8
Nova Scotia	9,783	869.0
New Brunswick	7,974	889.8
Quebec	73,337	728.5
Ontario	104,976	609.3
Manitoba	12,856	-
Saskatchewan	11,182	824.9
Alberta	36,394	739.0
British Columbia	38,863	650.3
Yukon	529	1103.9
Northwest Territories/Nunavut	1,122	1007.1

Table 4. The geographic distribution of the Licensed Practical Nurse workforce in 2020

Geographic Distribution of the Licensed Practical Nurse Workforce in 2020 (CIHI, 2021b)		
Jurisdiction	LPN Headcount	LPN per 100,000 Population
Canada	130,710	301.7
Newfoundland and Labrador	2,391	422
Prince Edward Island	770	449.2
Nova Scotia	4,439	419.1
New Brunswick	3,076	343.8
Quebec	29,398	299.3
Ontario	54,103	324.1
Manitoba	3,562	237.1
Saskatchewan	3,770	278.9
Alberta	15,902	298.8
British Columbia	12,769	221.4
Yukon	227	-
Northwest Territories	126	263.2
Nunavut	177	-

The size of the nursing workforce is shaped by a number of key factors, including: (1) the rate of entry of new nurses into the workforce through the education pipeline, immigration, and return to

practice, (2) the rate of attrition from the workforce as a result of death, retirement, emigration, and voluntary attrition, and (3) the practice patterns of the active workforce, including nurses' levels of activity, the sectors of care within which they participate, and the types of services they provide. Quantifying these trends through robust nursing workforce planning exercises, and understanding the underlying factors shaping these trends, are fundamental to designing evidence-informed solutions to the challenges described in this report and developing a nursing workforce that is equipped and supported to meet the needs of patients and health care systems.

As highlighted in RNAO's "70 years of RN effectiveness" database, studies have demonstrated significant direct links between RN care and positive patient, organizational, and financial outcomes (RNAO, n.d.-a). Decreased RN staffing was associated with increased patient mortality in academic hospital settings, with increased inpatient mortality being associated with shifts toward lower RN staffing (Needleman et al., 2020). Similarly, a higher percentage of direct care provided by RNs with BSN, MSN, or doctoral degrees was associated with lower occurrences of healthcare-acquired, catheter-associated urinary tract infections in U.S. hospital settings (Park et al., 2018). In the long-term care sector, recent U.S. evidence has linked increased RN care hours (to 0.8 RN hours per resident per day) to a 22 percent reduction of inappropriate antipsychotic medication use among dementia residents and a 25% reduction in non-dementia residents (Phillips et al., 2018). Given the strong evidence on the impact of nurses and skills mix on patient care, quality, and safety, these and care delivery models must be designed based on patient complexity, acuity, stability, and predictability of outcomes.

Where to from here?

Nurses (Registered Nurses, Nurse Practitioners, Licensed and Registered Practical Nurses, Registered Psychiatric Nurses) represent the highest proportion of health care workers globally with nearly 450,000 nurses working in Canadian health systems (CIHI, 2021b). The impact of nurses and the key roles they played in managing the COVID-19 pandemic has been evident not only across Canada but around the world. However, this is not new information about the nursing workforce and the positive impact they have in many roles including leadership and direct care across a variety of settings.

The pandemic has highlighted yet again the urgency that is needed to address these alarming trends of nurses leaving the profession and nursing shortages that have created critical gaps in care across care settings (Rosa et al., 2020). These issues have continued to remain despite numerous reviews, reports, and efforts to address this ongoing crisis.

The RSC review has provided an opportunity during yet another crisis in nursing workforce to bring together a coalition of nursing leaders and experts across Canada to provide key recommendations and actions drawing from their experience and expertise, and from findings from this review.

Review Objectives

1. Conduct a review and trending analysis of evidence outlining the nursing exodus in Canada and Internationally pre-COVID and during COVID: issues and considerations.
 - a. Review of conditions and considerations for nurses who continue to stay in the workforce: positive and negative impacts of staying

2. Examine effective policies and strategies that have been implemented and / or recommended.
 - a. Effectiveness will be determined based on reported impact on quality and outcomes of care and from feedback from nurses.
3. Drawing from findings regarding objectives 1 and 2, provide recommendations for key actionable strategies and policies that need to be implemented.

Review Approach

This review was completed by the NS team through the participation of diverse experts and academic scholars in the province. We used an iterative approach in this review as outlined in figure 1 which involved a mixed-methods approach to data collection (directed literature review, jurisdictional scan, and interviews with nurses and stakeholders) and assessment of initial, developing, and final key messages alongside the Working Group to ensure relevance and alignment with current nursing context. As part of this review, we engaged over 17 leading national nursing experts, analyzed over 40 academic documents and over 45 jurisdictional sources, and completed a case study in two provinces with 42 participants (31 in NS, 11 in SK).

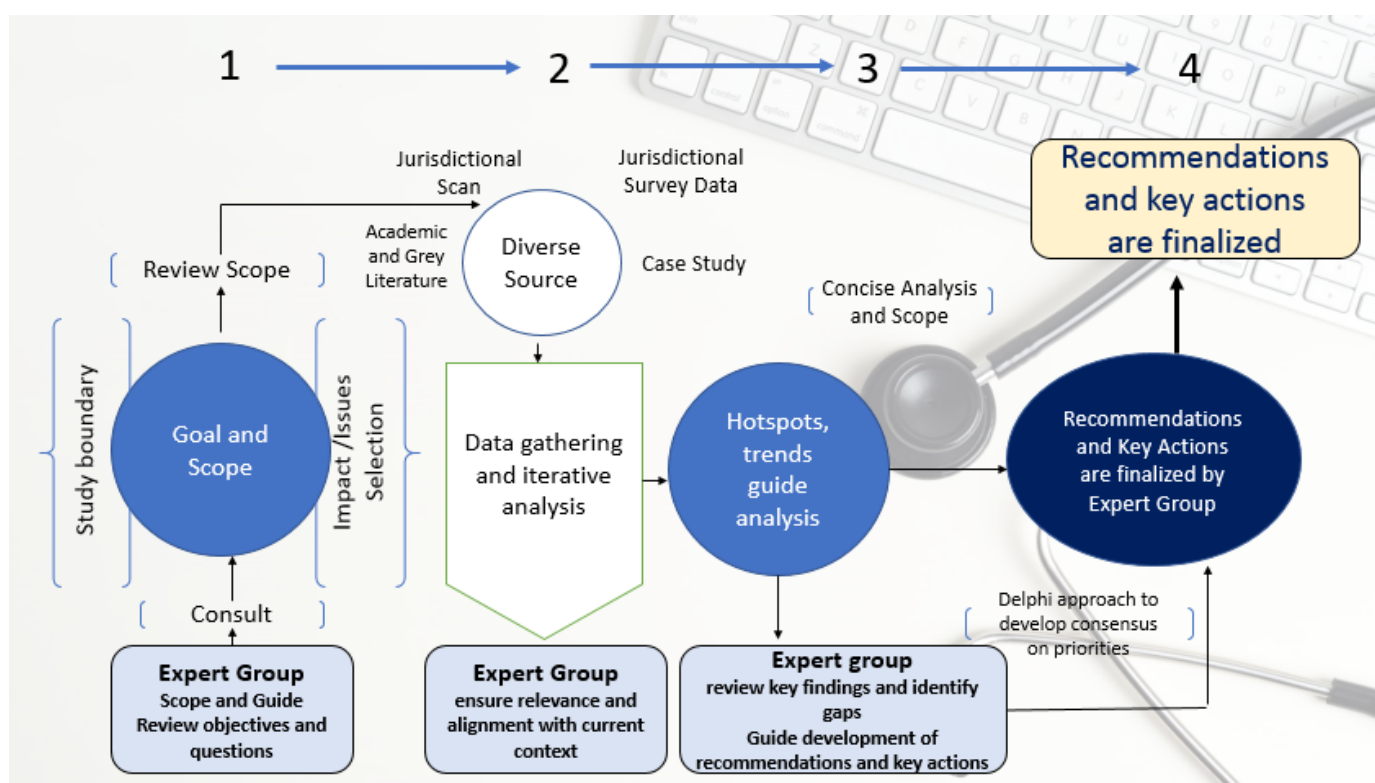


Figure 1: Mixed methods approach (adapted from Barthel et al., 2014)

The following sections describe each of the review methods used, including their key objectives and methods.

Review Component 1: Directed Literature Review and Jurisdictional Scan

Search Overview

Our approach included 2 separate search strategies: a directed academic and grey literature search and a directed search of the jurisdictions.

Objectives - Directed Literature Review and Jurisdictional Scan

The specific objectives of the directed literature search and jurisdictional scan were to identify:

- the antecedent conditions that have led to a shortage of nurses in select health systems (Canada, UK, Australia, and United States),
- how and if conditions leading to shortages of nurses have changed over time,
- the interventions/policies that health systems have recommended to address shortages,
- the interventions/policies health systems have *implemented* to address shortages and their outcomes, and
- the interventions/policies that have not been implemented.

Methods - Directed Literature Review

A directed literature search was conducted to identify relevant articles from time periods where there was an identified higher-than-normal front-facing nurse exodus from the health system.

Academic literature was limited to systematic reviews and meta-analyses focused on nurses leaving or exoduses in Canada and world-wide. A literature review was conducted to identify what has been written about nursing shortages and exoduses using a targeted approach (Paré et al., 2015). This method was determined to best fit the context of a rapid review timeline, while also achieving its objectives. Although many literature reviews are selective in identifying literature (Davies, 2000), a systematic approach to searching and identifying academic literature within SCOPUS (Burnham, 2006) was used (see Supplemental Material for more details).

This review of key issues and considerations over time within this literature helped us include diverse topics such as education and training, work life balance and value, as well as racial and EDI considerations. We compared findings with literature during COVID-19. Literature recommended by Working Group members were also included in the analysis.

Inclusion criteria: To be included in the review, sources had to have been published since 2020 (onset of pandemic), or in one of the time



periods identified in Table 5. Articles had to focus on nursing shortages, including reasons such as turnover and attrition, and include either policy recommendations or implemented policies intended to address nursing shortages. Policy documents and health reports in the grey literature were also included. The review began with priority documents identified by the field experts in the working group. Additional documents were identified based on recommendations from the working group and other experts.

A directed literature search was done in the chosen countries’ nursing workforce history to identify relevant articles within these identified timeframes of higher-than-normal nurse exodus. Academic literature was limited to reviews with a specific method section (i.e., systematic review, network-meta-analysis). These periods were guided by the expert working group. Two time points were chosen for each jurisdiction, plus the current time of the pandemic. Time points were chosen based on identification of an identified crisis regarding nursing shortages or an exodus in the select countries were identified by reviewing histories of the nursing workforce.

To gather an understanding of nursing shortages across health systems, a health system conceptual framework (Böhm et al., 2013) was used to choose a diverse set of health systems. Three broad categories of health systems have been used for categorization: National Health Service, National /Social Health Insurance, and Private Health Insurance (Böhm et al., 2013; Burau & Blank, 2006). According to this organizing framework, Canada has national health insurance. One country with a similar health system and one health system from each of the other categories was chosen. Additionally, to keep non-health related differences to a minimum, we selected countries with similar cultures, language, and demographics. These included:

- Australia (National Health Insurance)
- UK (National health system)
- U.S. (Private health system)

Table 5: Countries and time periods of eligibility

Region	Time period 1 (literature timeline)	Time period 2 (literature timeline)
Canada	1996 (1996-1998)	2006 (2006-2008)
England NHS	1999 (1999-2001)	2015 (2015-2017)
Australia	2002 (2002-2004)	2016 (2016-2018)
United States	2000 (2000-2002)	2010 (2010-2012)

Data extraction: Eligible articles were reviewed using an extraction template (Supplemental Material) designed for this project. Data were extracted as summaries or quotes of text strings and tabulated in an Excel spreadsheet with columns organized in relation to the data points. After populating the spreadsheet, data were compared across documents. Team members met weekly, at a minimum, to review and discuss progress and findings.

Methods - Jurisdictional Scan

We performed a jurisdictional scan of key policies and relevant documents in Canada.

Inclusion Criteria: The Jurisdictional scan included releases/reports from nursing organizations (2020-present) or reports/news releases with information from government officials (2000-present).

The 20-year period was selected as it would capture recommendations and actions from before and after the nursing shortage of 2006. There was interest in also identifying recommendations from the 1996 to 1998 shortage, but the nursing organization websites, as a rule, did not have data from that period. The same time frames as the academic and grey literature were chosen.

To determine how COVID-19 had impacted nurses’ experiences, we also summarized surveys from various jurisdictions that involved nurses’ views/opinions on their profession at various points during the pandemic (including its impact on intention to leave, work environment, satisfaction, etc.). Surveys found in both searches and ones identified by the working group were included.

Search strategy: These documents were identified using two main approaches. In the first approach, a targeted search of the websites of select nursing organizations in Canada was undertaken. These were identified as key nursing organizations in Canada by members of the Working Group. Organizations are listed in Table 6. In the second approach, we conducted a series of Google searches. The following phrases were used in the Google search bar (“Place”) and (short*) and (nurs*). The search was replicated for each “place” of interest, and the specific search terms used for each place are listed in Table 7. For each search, only the hits identified on the first page of the Google generated results were reviewed. Google searches were date restricted coincident with periods of nursing crisis ± 2 years: 2002-2008; 2020-present. Additional date restricted Google searches were conducted for the time periods between 2000-2002 and 2008-2019 to ensure coverage from 2000-present.

Table 6: List of Canadian Nursing Organizations whose websites were searched for recommendations for the jurisdictional scan

Targeted jurisdiction	Nursing organization websites searched
Canadian	Canadian Nurses Association; Canadian Nurses Foundation; Canadian Federation of Nurse Unions; Canadian Association of Schools of Nursing; Canadian Nurses Protective Society
British Columbia	Nurses and Nurse Practitioners of BC; BC Nurses Union
Alberta	College and Association of Registered Nurses of Alberta; United Nurses of Alberta
Saskatchewan	Saskatchewan Association of Licensed Practical Nurses; Saskatchewan Union of Nurses; Saskatchewan Registered Nurses Association
Manitoba	College of Registered Nurses of Manitoba; Manitoba Nurses Union
Ontario	Registered Nurses Association of Ontario; College of Nurses of Ontario; Ontario Nurses Association
Quebec	Ordre des Infirmières et Infirmiers du Québec; Fédération Interprofessionnelle de la Santé du Québec
New Brunswick	Nurses Association of New Brunswick; New Brunswick Nurses Union
Nova Scotia	Nova Scotia College of Nursing; Nova Scotia Nurses’ Union
PEI	College of Registered Nurse of PEI; PEI Nurses Union
Newfoundland	College of Registered Nurses of NFLD; Registered Nurses’ Union Newfoundland and Labrador
Northwest Territories	Registered Nurses Association of Northwest territories and Nunavut
Yukon	Yukon Registered Nurses Association
Nunavut	Registered Nurses Association of Northwest territories and Nunavut

Table 7: List of Place names used in Google search

Targeted jurisdiction	Place names used
Canadian	Canada or CAN
British Columbia	British Columbia or BC
Alberta	Alberta or AB or ALTA
Saskatchewan	Saskatchewan or Sask or SK
Manitoba	Manitoba or MN or Man
Ontario	Ontario or ON or Ont
Quebec	Quebec or QC
New Brunswick	New Brunswick or NB
Nova Scotia	Nova Scotia or NS
Prince Edward Island	Prince Edward Island or PEI
Newfoundland	Newfoundland or NFLD or NF
Northwest Territories	Northwest Territories or NWT
Yukon	Yukon or YK
Nunavut	Nunavut or NU

Data extraction: Specific recommendations and policies were extracted as quoted text strings and placed on a data extraction template. Recommendations and policies were then categorized as targeting one of six policy categories: Macroeconomic Policies, Workforce Policies and Planning, Positive Practice Environments, Leadership, Recruitment and Retention and Education and Training (Oulton, 2006).



Review Component 2 National Key Informant Interviews

Nursing leaders from across Canada provided their perspectives on issues surrounding nurse shortages, migration, or turnover in Canadian health care systems. Input from these stakeholders was received through 1:1 interviews or email exchanges between July and August 2021. Documents (interview notes and email correspondence) were reviewed for common themes.

A working group of nurse leaders from across Canada was established to guide the activities described in this report. The key informants and research team leads met several times and key informants were also invited to participate in interviews to provide insight on nursing shortages from a high-level health system and policy perspective. The findings from these interviews are described below.

Objectives

- To identify policy levers, directions, and strategies of Canadian jurisdictions that were used during the pandemic to help stem the migration of nurses.
- To describe nationwide strategies and/or policies that aimed to inform future actions regarding the migration of nurses.

Methods

National Nursing Executives and leaders from across Canada provided their perspectives on nursing issues surrounding shortages, migration, and turnover in Canadian health care systems, with a focus on identifying similarities and differences between pre-pandemic and pandemic timeframes. These leaders were approached by the Chair and the RSC leads to ensure cross jurisdictional perspectives, and diverse expertise and experiences. Leaders who accepted the invitation participated as expert team members in this review.

Input from these stakeholders was received either through one-on-one interviews (documented through observer notes) or through email exchanges (July through August 2021). Questions included, “What are the reasons nurses are staying?,” “What are key policies and strategies that need to be implemented or have been implemented to keep nurses from leaving?,” and “Have any of these reasons differed since the onset of the pandemic?”

Documents (interview notes and email correspondence) were reviewed for common themes.

In addition to lending their expert view through interviews, these members participated in the design and conduct of the review including write-up of the final report.

Review Component 3 Case study (Nova Scotia & Saskatchewan)

The “case” for this study is nursing perspectives of the exodus. The main objective was to explore nurse migration in two jurisdictions in Canada (Nova Scotia & Saskatchewan). The rationale for choosing Nova Scotia and Saskatchewan was the location of case study leads and access to networks in these two jurisdictions for recruitment. Case boundaries focused on nurses’ perceptions of the reasons for leaving and for staying in the profession or nursing position. The case study identified key influences that impacted nurses’ reasons to leave or stay during the COVID 19 pandemic.

Nurse Interview Data

Case study methods included open-ended interviews with nurses in two provinces (N= 31 in Nova Scotia, N=11 in Saskatchewan) and an analysis of available exit survey data findings from each province. Sociodemographic information was collected via survey in relation to key nurse descriptors including role, age, gender, race, years of experience, and practice setting.

Nurses working in several areas within the health system across two provinces, Nova Scotia and Saskatchewan, were interviewed.

Data from nurse exit interviews at two organizations in Nova Scotia (Nova Scotia Health & IWK) were collected. Exit interview data was retrieved from either a short survey or a phone interview offered to nurses after they had resigned from the organization. We were granted permission from these organizations to view de-identified data from exit interviews conducted over a 14-month period, from June 2020 through August 2021. Exit interview data was analyzed to identify factors that led to nurse migration during the COVID-19 pandemic.

Objectives

- To understand the outmigration or movement of nurses outside of or within healthcare organizations during and before the pandemic.
- To explore the reasons for the migration; for example, policy or system-level decisions that have contributed to the migration.
- To examine recruitment and retention strategies before and during the pandemic that aimed to reduce or minimize the migration of nurses.

Methods

A call for participants was made through the Research Innovation and Discovery team at Nova Scotia Health and the Nursing and Interprofessional Practice team at the IWK Health Centre. An introductory email was sent to the Provincial Nursing Network. Recommendations from the Key Informant Working Group were also taken into consideration.

Participants

Profile of Nova Scotia Nurses

Licensed nurses from Nova Scotia were situated in either an urban (N=16) or rural (N= 15) area of the province. At the time of participation, ages ranged from 22 to 63 years and represented a variety of nursing roles within the healthcare system. Nurses were all women and worked in their area of practice for over 6 months up to 20 years. Figure 2 provides data of the participant's nursing role. Figure 3 provides data on nursing practice area.

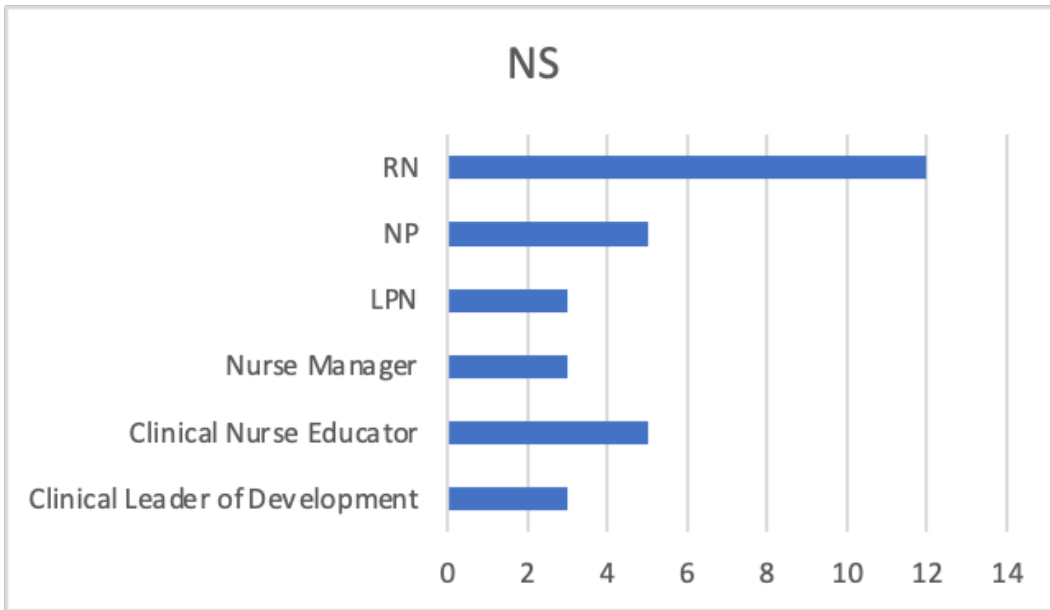


Figure 2: Nursing Profile of Nova Scotia Participants

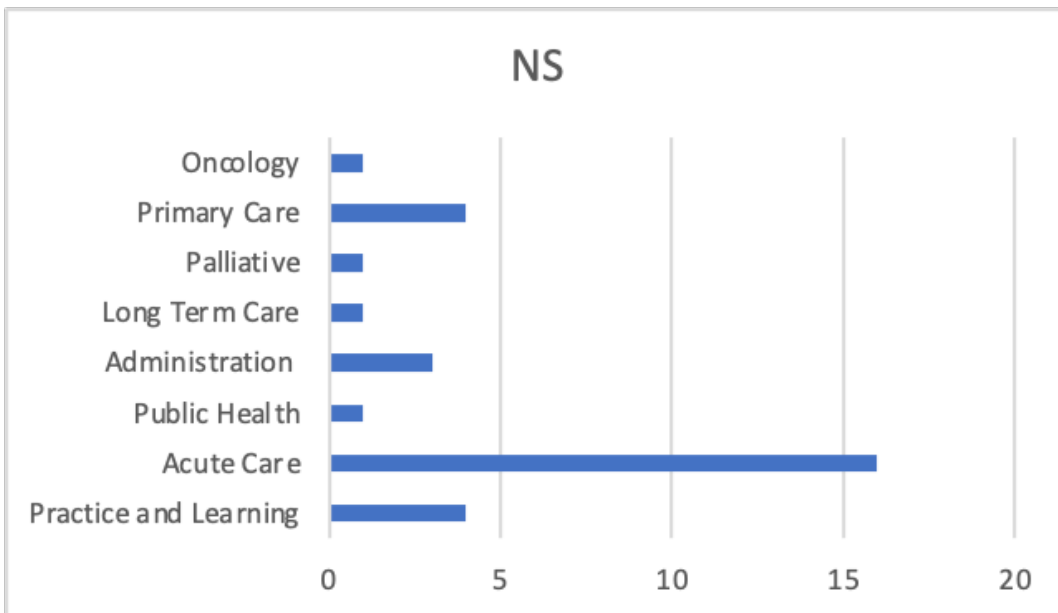


Figure 3: Place of Nurse Employment

Profile of Saskatchewan Nurses

Nurses from Saskatchewan were situated in either an urban (N=6) or rural (N=5) area of the province. At the time of participation, ages ranged from 31 to 60 years and represented a variety of nursing roles within the healthcare system. Nurses were all women and worked in their area of practice for over 1 year up to 24 years. Figure 4 provides data of the participant’s nursing role. Figure 5 provides data on nursing practice area.

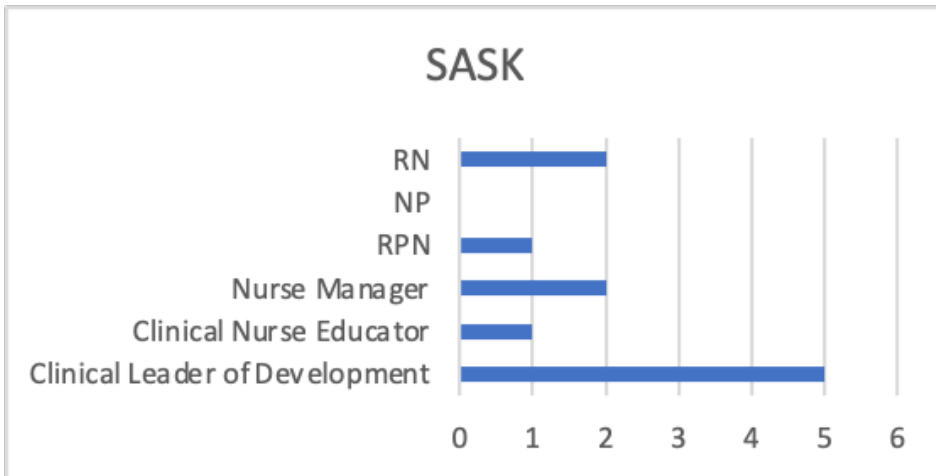


Figure 4: Nursing Profile of Saskatchewan Participants

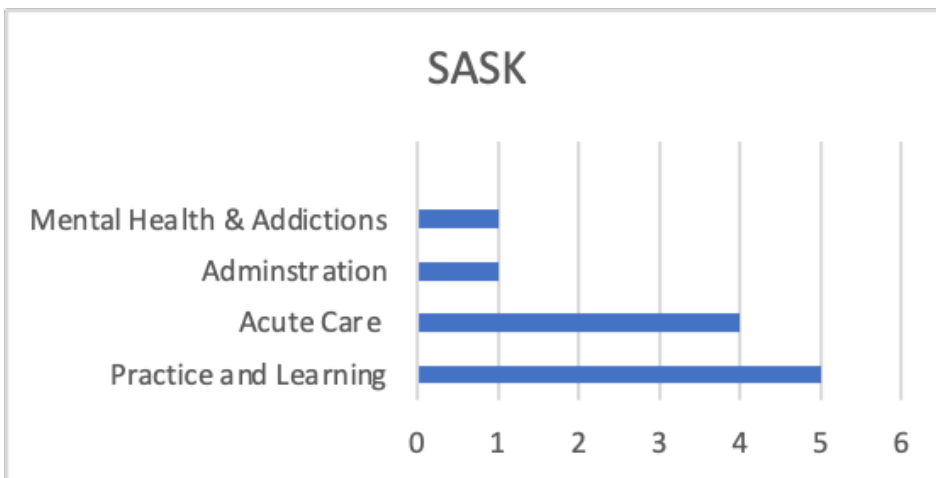


Figure 5: Place of Nurse Employment

Most respondents who were interviewed observed migration of their nursing colleagues. Explanations as to why there were high numbers of nurses leaving their organization or moving from one department to another were variable and appeared to be dependent on multiple factors (level of nursing experience, age/cohort, speciality, region, and rural vs. urban). This suggests that in addition to a pan-Canadian nursing strategy that focuses on broad recruitment and retention plans, a regional approach should be considered also.

In addition to issues regarding migration, there were common themes across all responses that related to workload and overall working conditions that need drastic improvement to prevent further burnout, turnover, and migration.

Review Findings

Objective 1: Evidence for nursing shortages in Canada and internationally, during and pre-pandemic

Findings from Directed Literature Review

Causes and conditions for nursing shortages and how and if they have changed over time

Key findings (pre-COVID-19): There are various overlapping and interconnected environmental, organizational, team, and individual factors influencing nurses’ decisions to leave point-of-care positions. A better understanding of the interaction of these factors across settings is needed to better promote positive factors and reduce/remove negative factors. Table 8 provides an overview of pre-Covid-19 factors; Table 9 provides factors that arose during the pandemic. Table 10 provides a complete list of factors from both pre-pandemic and during the pandemic.

Included network meta-analyses and literature reviews found that the factors most positively correlated with nurse turnover included higher job strain, role tension, work-family conflict, lower job control, complexity, and recognition. Factors most negatively correlated with nurse turnover included more supportive and communicative leaders, higher team cohesion, more positive organization climate and greater organizational support, better fit with the organization, less job insecurity, fewer perceived job alternatives, and nurses higher in commitment, job involvement, intrinsic and extrinsic motivation, and job satisfaction.

Key findings (during COVID-19): Studies which focused on the impact of COVID-19 on nurses revealed that existing factors affecting retention and recruitment of nurses (as above) continue during the pandemic. Factors such as job dissatisfaction due to job strain, burnout, and ability to provide quality care were exacerbated. Increasing demands unique to COVID-19 that exacerbated these issues included the use of personal protective equipment (PPE), changing COVID-19 protocols, higher patient volumes and admissions to ICU, high acuity patients, and redeployment to other areas of the health system.

Pre-COVID-19

Based on the factors identified in the literature, six categories of factors have led to nursing shortages pre-COVID-19 (See Table 8).

Table 8: Factors contributing to increases in nursing workforce shortages (pre-COVID-19)

Factors	Causes
Demand on services	<ul style="list-style-type: none"> An aging population as well as a rise in chronic disease means acute care patients are higher acuity, requiring more assistance than a generation ago (Chenoweth et al., 2010; Flinkman et al., 2010; Goodare, 2017; Haddad et al., 2020; Hutchinson et al., 2012; Lu et al., 2012; Park & Yu, 2019; US General Accounting Office, 2001, McDonald & Ward-Smith, 2012; Schulter et al., 2008).

Job dissatisfaction and burnout	<ul style="list-style-type: none"> The pressures faced by nurses contribute to job dissatisfaction, which is highly correlated with burnout and intention to leave, including lack of opportunities or support to work to full scope of practice (Littlejohn et al., 2012; Marufu et al., 2020; McDonald & Ward-Smith, 2012; Schluter et al., 2008). Nurses who feel unable to deliver quality care because of external pressures, like working short-staffed, are at risk of burnout (Goodare, 2017; Haddad et al., 2020; Murray, 2017). Other characteristics of nursing like shift work and risk of abusive workplace violence and harassment also play a role (Haddad et al., 2020; Marufu et al., 2020).
Insufficient supply of new nurses	<ul style="list-style-type: none"> Education and clinical practice application of new nurses is outpaced by the demand for nursing services. This is partially due to drops in applicants as other careers are more appealing, and in part because programs are limited by the number of students they can accept. This also requires an exploration of the capacity in the education sector working with key partners (Janiszewski Goodin, 2003, Adams et al., 2021; Finlayson et al., 2002; World Health Organization [WHO], 2020).
Unsupportive work environment	<ul style="list-style-type: none"> The challenge of managing highly acute patients is compounded by physically and emotionally unsupportive work environments, requiring nurses to work harder with fewer resources (Cowden et al., 2011; Marufu et al., 2020; Schulter et al., 2008). Nurses feel unsupported by management and undervalued for the services they provide (Cowden et al., 2011; Cummings et al., 2010; McDonald & Ward-Smith, 2012).
Retention and turnover	<ul style="list-style-type: none"> Retaining the nursing workforce is needed, as hiring more is insufficient to meet demands for nursing services. New nurses are particularly at risk of feeling overwhelmed in stressful environments, while hospitals lack resources to adequately train new nurses, particularly in times of stress. Generational differences need to be considered in retention strategies, as more experienced nurses respond to different incentives than those new to the profession.
Lack of funding	<ul style="list-style-type: none"> Both chronic and acute gaps in funding have affected the development of nursing education and clinical practice programs as well as the financial value placed on the design of high quality and safe nursing programs and service (Finlayson et al., 2002; WHO, 2020; Duffield & O'Brien-Pallas, 2003; Adams et al., 2021).

During COVID-19

Factors that have led to nursing shortages during COVID-19 are described in Table 9 (below). Table 10 highlights the summary categories from literature of factors affecting the nursing shortage.

Table 9: Factors contributing to increases in nursing workforce shortages (during COVID-19)

Factors	Causes
Demand on services	<ul style="list-style-type: none"> Patient volumes increased due to COVID-19 Higher admissions to ICU and higher acuity patients
Job dissatisfaction and burnout	<ul style="list-style-type: none"> The COVID-19 pandemic has exacerbated existing pressures on nurses. Job dissatisfaction remains and workload, burnout, stress, fatigued have increased due to the overwhelming pressure on the health system during COVID-19.
Insufficient supply of new nurses	<ul style="list-style-type: none"> Nursing students indicating regret for entering the program and expressing potential to leave the profession upon graduation. Increased risk of student nurses quitting their programs.
Fear	<ul style="list-style-type: none"> During the first wave(s) of the pandemic, nurses were fearful of spreading the virus to their family members and catching the virus themselves and potentially dying, as well as working around the clock
Scarce resources	<ul style="list-style-type: none"> COVID-19 has intensified competition for scarce nursing resources. Redeployment of nurses to other areas of the health system impacted other areas of care.

Changing protocols	<ul style="list-style-type: none"> Rapidly changing protocols to respond to COVID-19 put pressure on nurses and on the health system. (e.g., the use of personal protective equipment (PPE), public health and organizational protocols).
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Table 10. Factors affecting nursing shortages – summary categories from literature

Factors	Causes
Demand on services	<ul style="list-style-type: none"> Aging population (Chenoweth et al., 2010; Flinkman et al., 2010; Goodare, 2017; Haddad et al., 2020; Hutchinson et al., 2012; Lu et al., 2012; Park & Yu, 2019; US General Accounting Office, 2001) Changing demographics (including chronic diseases) (Cowden et al., 2011; Littlejohn et al., 2012; Oliver et al., 2019) Rise in hospital patient acuity (McDonald & Ward-Smith, 2012; Schluter et al., 2008; US General Accounting Office, 2001)
Job dissatisfaction and burnout	<ul style="list-style-type: none"> Insufficient and unsafe staffing (Littlejohn et al., 2012; Marufu et al., 2020; McDonald & Ward-Smith, 2012; Schluter et al., 2008) Not feeling fairly paid for qualifications and workload (Bimpong et al., 2020; Goodare, 2017) Work-life balance (Goodare, 2017; Haddad et al., 2020; Murray, 2017) Risk of abuse (Haddad et al., 2020; Marufu et al., 2020)
Insufficient supply of new nurses	<ul style="list-style-type: none"> Underfunding and underinvestment (Adams et al., 2021; Finlayson et al., 2002; WHO, 2020) Insufficient faculty and clinical and classroom space (Conway, 2001; Littlejohn et al., 2012; RNAO, 2016; 2021e; 2021f) Low enrolment in nursing programs (Duffield & O’Brien-Pallas, 2003; Janiszewski, 2003) Shrinking applicant pool (Littlejohn et al., 2012; Murray, 2017), possibly caused by increasing opportunities for working women and students (Conway, 2001; Duffield & O’Brien-Pallas, 2003) Poor image of nursing (Janiszewski, 2003)
Unsupportive work environment	<ul style="list-style-type: none"> Poor staff–patient ratios (Cowden et al., 2011; Marufu et al., 2020; Schluter et al., 2008) Problems with organizational support (e.g., lack of support, inconsistent culture, organizational not living to its values, poor teamwork, feeling deprioritized) (Goodare, 2017; Marufu et al., 2020; RNAO, 2016; RNAO, 2020b, RNAO, 2021e) Unsupportive leadership (Cowden et al., 2011; Cummings, Hutchinson, et al., 2010; McDonald & Ward-Smith, 2012) Lack of autonomy, recognition (for work done, financial remuneration) and safety issues (e.g., bullying and harassment) (Duffield & O’Brien-Pallas, 2003)
Retention and turnover	<ul style="list-style-type: none"> Age of nursing workforce (Adams et al., 2021; Duffield & O’Brien-Pallas, 2003; Flinkman et al., 2010; Janiszewski, 2003; Littlejohn et al., 2012a; Lu et al., 2012; Nevidjon & Erikson, 2001; US General Accounting Office, 2001) Poor working conditions (e.g., high stress, unsupportive leadership; see factors 2 & 3) (Cowden et al., 2011; Marufu et al., 2020; McClain et al., 2020) Newer nurses not staying (Church et al., 2018; Eckerson, 2018; McDonald & Ward-Smith, 2012; Mooring, 2016; Nei et al., 2015); transitioning from student nurse to practicing nurse is stressful and challenging (Eckerson, 2018), and faculty may have not intervened to mitigate student issues (Mooring, 2016) Hospitals lack resources to adequately train new nurses (Grimm, 2021) Lack of professional advancement opportunities (Flinkman et al., 2010; Marufu et al., 2020) Burnout, chronic fatigue, anxiety, mood issues (Goodare, 2017)

Lack of funding	<ul style="list-style-type: none"> • Resource constraints (Duffield & O’Brien-Pallas, 2003) • Economic downturns or recessions lead to layoffs and hiring freezes (Alameddine et al., 2012) • Decline in investment in nursing training (Finlayson et al., 2002; WHO, 2020) • Years of underinvestment and funding cuts to nurses’ pay and training bursaries (Adams et al., 2021) • Limited workforce planning policies (Adams et al., 2021)
COVID-19 Pandemic	<ul style="list-style-type: none"> • Amplification of job demands and increased hours worked while requiring nurses to adapt to changing guidelines and redeploy to new areas of new work has affected nurses’ mental and physical health as well as their ability to deliver quality patient care (Grimm, 2021; Lavoie-Tremblay et al., 2021). • While some services return to “normal”, those still working under COVID conditions feel a loss of teamwork (Grimm, 2021). • Increased staffing competition due to COVID-inspired turnover; also includes greater financial pressure as hospitals compete to recruit staff (Grimm, 2021)

Findings from Jurisdictional Scan

Causes and conditions for nursing shortages and how and if they have changed over time

Key findings: Our synthesis of key findings from jurisdictional surveys revealed several cross-cutting challenges. High rates of intentions to leave within the nursing profession that predate COVID-19 have been exacerbated by the demands of the pandemic response. The demands associated with COVID-19, meeting increasing patient needs, and inadequate staffing levels, have led to excessive workloads and high levels of stress and burnout among nurses. These strains are compounded by the precarious working conditions faced by nurses who are increasingly experiencing verbal and physical abuse in the workplace. Early to mid-career nurses appear to be particularly hard-hit by these challenges.

A review of existing survey data was conducted. Eleven surveys were identified through the jurisdictional scan. While some of these surveys described the distribution of respondents across nursing roles, only one survey reported on disaggregated and comparative findings across these roles. Document analysis of the surveys was conducted to extract key methodological and contextual information, key survey findings, and resulting recommendations. Key survey findings and recommendations were then analysed thematically to identify cross-cutting challenges and promising practices (Table 9).

Table 11: Key findings from surveys of nursing perspectives included in Jurisdictional Scan

Key Findings from Surveys of Nursing Perspectives Included in Jurisdictional Scan (N=7)		
Source	Key Survey Findings	Survey Recommendations
<p>Registered Nurses' Association of Ontario (RNAO, 2021d). Work and Wellbeing Survey Results.</p> <p>Jurisdiction: Ontario</p> <p>Data Collection: January-February 2021</p> <p>Participation: 2102 respondents, including 1910 registered nurses (91%), 93 nurse practitioners (4.4%), and 96 nursing students (4.6%)</p>	<ul style="list-style-type: none"> • 95.7% of nurses surveyed indicated their work had been impacted by the pandemic • 60.3% of nurses rated the level of stress they experience in their job as a result of the pandemic as either high or extremely high • Most nurses (79.2%) reported substantial concerns about work related risks associated with the pandemic • Almost all nurses (97.4%) reported that the pandemic had affected their work/life balance • High levels of stress were most pronounced among early to mid-career nurses, and nurses who worked full-time • Over one third (37.4%) of nurses reported wanting to work fewer hours post-pandemic • 22.2% of nurses were eligible to retire, with 16.3% planning to retire within the next two years • 16.4% of nurses were likely or very likely to leave nursing post-pandemic • 1 in 5 nurses (26.2%) took time off to manage stress, anxiety, or other mental health issues due to the pandemic • Intentions to leave the profession were stronger amongst those with lower coping and adjustment scores, lower assessments of employer and government support • Survey results indicate that younger nurses, staff nurses, student nurses, nurses working full-time, and nurses working over 40 hours per week displayed lower coping and adjustment scores • Nurse practitioners displayed higher coping and adjustment scores • Nurses who reported feeling supported by their employer and government were less likely to report intentions to leave the profession 	<ul style="list-style-type: none"> • Increase support for early to mid-career nurses • Increase staffing levels • Bolster admissions to baccalaureate programs by 10% in each of the next 4 years • Increase NP supply • Implement succession planning for management, senior management, and faculty positions

<p>Saskatchewan Union of Nurses (2021). 2021 Member Survey - Base Report.</p> <p>Jurisdiction: Saskatchewan Data Collection: February-March 2021 Participation: 2240 members of the Saskatchewan Union of Nurses, including registered nurses, nurse practitioners, & registered psychiatric nurses</p>	<ul style="list-style-type: none"> • As a result of the pandemic, 78.8% of nurses reported greater pressure on their work-life balance, 78.0% of nurses reported a greater sense of tension, and 67.2% reported a greater sense of anxiety and hopelessness • Only 23.5% of nurses rated existing workplace supports to manage their wellbeing during the pandemic as being adequate • 74.1% of nurses reported having experienced physical violence in the workplace, of which 60.2% had occurred within the past year • 90.7% of nurses reported having experienced verbal abuse in the workplace, of which 83.0% had occurred within the past year • 73.9% of nurses reported working some level of overtime in a typical week, with 30% of nurses working 5+ hours of overtime in a typical week • 45.7% of nurses reported having considered leaving nursing within the previous year • 66.9% of nurses reported having seriously considered applying for a different position within the previous year • The most important drivers shaping nurses' decisions to either leave or remain in their current position are staffing levels and workload, and work schedules or environment • Supportive and proactive unit management, and professional satisfaction and development opportunities also appear to contribute to retention • 20.4% of nurses reported being eligible to retire by the end of 2021, with declining numbers of eligible nurses reporting intentions to remain in practice • Nursing working conditions represent the key driver of intention to retire 	<p>N/A</p>
<p>Havaei et al. (2019). Effect of Nursing Care Delivery Models on Registered Nurse Outcomes</p> <p>Jurisdiction: British Columbia Data Collection: n/a Participation: 416 medical-surgical nurses who are members of the BCNU</p>	<ul style="list-style-type: none"> • Skill mix moderated the relationships between patient acuity and heavy workloads, and emotional exhaustion. • RNs working in models of nursing care that included LPNs displayed lower levels of emotional exhaustion when caring for more acute patients, as compared to RNs working in models that did not include LPNs • Work environment factors, including staffing and resource adequacy and skill mix, were the strongest predictors of emotional exhaustion, all displaying negative relationships with levels of emotional exhaustion • Work environment factors, including staffing and resource adequacy, and participation in hospital factors, were also the strongest predictors of job satisfaction, all displaying positive relationships with levels of job satisfaction. • Mode of nursing care delivery was not found to be directly related to nurses' levels of emotional exhaustion or job satisfaction. 	<ul style="list-style-type: none"> • Invest in workplace conditions to improve nurse outcomes including adequate staffing and resources, and opportunities for nurse participation in organizational affairs • Investigate adherence to LPN scope of practice within modes of nursing care delivery

<p>Havaei et al. (2020). A provincial study of nurses' COVID-19 experiences and psychological health and safety in British Columbia, Canada: Final report.</p> <p>Jurisdiction: British Columbia Data Collection: October-December 2019 June-July 2020 Participation: 3676 active nurses who are members of the BCNU</p>	<ul style="list-style-type: none"> • 80% of respondents reported being somewhat to extremely concerned about contracting COVID-19 at work • 86% of respondents reported being somewhat to extremely concerned about bringing COVID-19 home • 52% of respondents reported inadequate staffing • 49% of respondents disagreed that PPE is high quality • 42% of respondents disagreed that there was sufficient PPE access to perform work safely • 41% of respondents rated transparency on organizational pandemic decisions as poor or failing • The prevalence rate for lifetime suicidal thoughts, plans and attempts, and for suicidal thoughts within the past year was 2 to 3 times the national average • During the pandemic, nurses reported higher levels of poor mental health, general negative treatment in the workplace, and lower quality of nursing care than before the pandemic • During the pandemic, a number of indicators improved, including a decrease in the number of nurses displaying high depersonalization scores, rating patient safety as poor, and who would not recommend their workplace to a friend or colleague. The prevalence of exposure to workplace violence also decreased. 	<p>N/A</p>
<p>Havaei, Smith, et al. (2021). The impact of the COVID-19 pandemic on mental health of nurses in British Columbia, Canada using trends analysis across three time points.</p> <p>Jurisdiction: British Columbia Data Collection: September-December 2019, April-May 2020, and June-July 2020 Participation: 10117 nurse respondents who are members of the BCNU (5034 at time 1, 1234 at time 2, and 3849 at time 3)</p>	<ul style="list-style-type: none"> • The prevalence of anxiety and depression symptoms amongst nurses significantly increased between the pre-pandemic period and early pandemic period (April-May 2020), from 30.8% to 44.7%, and 20.3 to 30.9%, respectively • The prevalence of anxiety and depression symptoms amongst nurses remained stable between April-May 2020 and June-July 2020. • Nurses working in long-term care displayed a much greater increase in the prevalence of anxiety symptoms between the pre-pandemic period and early-pandemic period (April-May 2020), from 29.6% to 61.2%, with these levels lowering to 36.8% between April-May 2020 and June-July 2020, while still remaining above pre-pandemic levels 	<ul style="list-style-type: none"> • Conduct a comparative evaluation of the impact of Covid-19 on the mental health of health workers across contexts

<p>Havaei, Ma, et al. (2021). Nurses' Workplace Conditions Impacting Their Mental Health during COVID-19: A Cross-Sectional Survey Study.</p> <p>Jurisdiction: British Columbia Data Collection: June-July 2020 Participation: 3676 active nurses, including 2735 registered nurses (74.4%), 200 Registered Psychiatric Nurses (5.4%), 15 dually registered RN/RPNs (0.4%), and 714 licensed practical nurses (19.4%)</p>	<ul style="list-style-type: none"> • 47% of nurses met the diagnostic cut-off of potential post-traumatic stress disorder • 38% of nurses met criteria for anxiety • 41% of nurses met criteria for major depression • 60% of nurses met criteria for high emotional exhaustion • Perceptions of workplace conditions during COVID-19, including workplace relations, organizational support, organizational preparedness, workplace safety, and access to supplies and resources were negatively associated with adverse mental health outcomes <p>*See Havaei et al. (2020) for additional descriptive results</p>	<ul style="list-style-type: none"> • Implement better workplace policies and practices to address nurses' suboptimal working conditions, and improve their mental health
<p>Registered Nurses' Union Newfoundland and Labrador (2021b). Registered Nurses' Union Calls on Parties to Address Growing Shortage of Registered Nurses.</p> <p>Jurisdiction: Newfoundland & Labrador Data Collection: Fall 2021 Participation: The Registered Nurses' Union of Newfoundland and Labrador's membership includes registered nurses and nurse practitioners (sample size not reported)</p>	<ul style="list-style-type: none"> • More than half of nurses reported their workplace being understaffed • Increased workload, short-staffing, and excessive overtime are impacting the mental health of nurses, leading to burnout and exhaustion • These strains are exacerbated by increased patient complexity and incidence of workplace violence 	<ul style="list-style-type: none"> • Recruit and retain RNs and NPs • Establish appropriate facility staffing and nursing workloads

<p>McGillis Hall, L. & Visekruna, S. (2020). Outlook on Nursing – A snapshot from Canadian nurses on work environments pre-COVID-19. Canadian Federation of Nurses Unions.</p> <p>Jurisdiction: Canada Data Collection: October 2019-March 2020 Participation: 7153 respondents, including 5994 registered nurses (83.8%), 916 licensed practical nurses (12.8%), 107 nurse practitioners (1.5%), and 136 registered psychiatric nurses (1.9%)</p>	<ul style="list-style-type: none"> • 27.3% of nurses rated the quality of the work environment as poor, with an additional 38.9% rating it as fair • 67.2% of nurses reported experiencing verbal abuse from patients and/or families at least a few times a month, with 21.2% experiencing verbal abuse on a daily basis • 39.3% of nurses reported experiencing physical abuse from patients and/or families at least a few times a month • 35.1% of nurses reported experiencing work-related injuries at least a few times a month • Nurses provided favourable ratings for the following dimensions of their work environments: nurse-physician relations and nursing foundations of quality care • Nurses provided unfavourable ratings for the following dimensions of their work environments: staffing and resource adequacy, nurse participation in hospital affairs, and nurse manager ability, leadership and support for nurses • Just over half (52.4%) of nurses reported dissatisfaction with their current work • 59.7% of nurses reported intentions to leave their roles within the next year as a result of job dissatisfaction, of which 27.1% intended to fully exit the nursing profession • Nurses were least satisfied with their education leave, educational opportunities, and opportunities for advancement • Nurses were most satisfied with their level of independence at work and their professional status • Nurses displayed high degrees of burnout across all its constituent dimensions, with 65.3% displaying high levels of emotional exhaustion, 50.2% displaying high levels of depersonalization, and 42.5% displaying high levels of decreased personal achievement 	<ul style="list-style-type: none"> • Establish a permanent National nursing bureau/office and appoint a nurse leader to advise the federal government, liaise with the provinces and territories, and plan for Canada's nursing workforce needs • Conduct annual standardized assessments of the quality and safety of nursing work environments to develop strategies to support the physical, mental and social health of nurses, mitigate the impact of COVID-19 on the nursing workforce, and invest in equipping nurses to meet the emerging needs of Canadians through ongoing educational development
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<p>Australian Nursing & Midwifery Federation (2021). The ANMSF (SA Branch) Nurses and Midwives Fatigue Survey 2021 – Interim Report.</p> <p>Jurisdiction: Australia</p> <p>Data Collection: May-June 2021</p> <p>Participation: 2843 nurses and midwives</p>	<ul style="list-style-type: none"> • Nurses and midwives reported higher levels of fatigue and burnout that in previous years • Respondents were experiencing decreases in staff resourcing and support, which led to levels of burnout and fatigue that presented risks to the safety • Over two thirds (68.2%) of respondents worked unpaid overtime • 1 in 4 respondents reported working double shifts • Approximately half of respondents (49.7%) reported having schedules that did not allow for sufficient time away from work, and 44.6% reported being called in on their days off. • Just under two thirds of respondents frequently encountered challenging behaviours at work, combined with increasing workloads • Workplace demands and fatigue amongst respondents were becoming more pronounced, particularly among those who 1) had worked double shifts, 2) were under 30 years old, 3) occupied a patient or client facing role, 4) perceived a change in the quality of care, and 5) were planning to exit their role • Over half of respondents (56.1%) intended to leave their role within the next 5 years • Younger nurses and midwives were exiting the workforce due to the heavy demands and pressures of their work environment 	<ul style="list-style-type: none"> • Ensure enforcement of occupational health and safety standards
<p>Fish, J., Corsini, N., Adelson, H., Adelson, P., Sharplin, G., Eckert, M. (2020) Nursing and Midwifery Workforce Climate Survey 2019: Full Report. Rosemary Bryant AO Research Centre.</p> <p>Jurisdiction: Australia</p> <p>Data Collection: August-September 2019</p> <p>Participation: 1559 respondents, including 1053 registered nurses (68.6%), 312 enrolled nurses (20.3%), and 169 registered midwives (11%)</p>	<ul style="list-style-type: none"> • Nurses and midwives displayed worsening of status across facets of occupational burnout, including personal accomplishment, depersonalization, and emotional exhaustion • Respondents reported high levels of emotional exhaustion, particularly among young nurses and nurses who had worked double shifts • Depersonalization was also worsening, particularly among those who 1) had worked double shifts, 2) were under 30 years, 3) had 1-10 years' professional experience, and 4) who reported intentions to exit their roles within 12 months • Just under half (49.1%) of respondents intended to leave their roles within the next 5 years, with 16% indicating that they intended to leave their profession altogether • Drivers of workforce exits included low staffing levels, challenging working conditions, high workloads and non-clinical duties, poor wellbeing and safety among staff, and unsupportive management and leadership 	<ul style="list-style-type: none"> • Review and adjust nursing staffing levels and workload • Provide education, training, and professional development opportunities • Develop better relationships between managers/leaders and nurses • Facilitate nurse participation in hospital affairs and governance • Introduce mentorship and peer support programs

<p>International Council of Nurses (2021). International Council of Nurses Policy Brief – The Global Nursing Shortage and Nurse Retention.</p> <p>Jurisdiction: Global Data Collection: December 2020 Participation: National Nursing Associations</p>	<ul style="list-style-type: none"> • 20% of associations reported an increase in nurses leaving the profession, and increased rates of intention to leave as a result of the pandemic • In UK, in addition to 40 000 existing nursing vacancies, 36% of the current workforce considered leaving in 2021 • Drivers of workforce strain and exits included: heavy workloads & insufficient resourcing, burnout & stress related to the pandemic response, the emergence of increasing needs without commensurate workforce increases, redeployments, and longer/additional shifts 	<ul style="list-style-type: none"> • Invest in long-term strategies to increase number of nurses through domestic training • Prioritize retention of the active workforce • Implement policies to improve wages, working conditions and career prospects • Protect safety and wellbeing of nurses • Provide adequate psychosocial support
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Survey findings suggests that health systems should prioritize 1) long-term recruitment of new nurses through domestic education programs, and 2) retention of the active workforce. These surveys suggest that retention of the existing workforce can be promoted through investment in:

- Establishing **safe staffing levels**
- Developing policies and programs designed to protect the **physical and psychological safety** of nurses
- Adopting **supportive management and leadership practices**, including engagement of nurses in policy and decision-making
- Offering desirable and competitive **working contracts**
- Providing **education, and professional development** opportunities; and
- Coordinating **mentorship & peer support** programs.

Findings from Key Informant Interviews

Causes and conditions for nursing shortages: Structural valuing of nursing skills and expertise

According to key informants, “valuing” nursing perspectives and expertise means ensuring nurses are represented at planning and decision-making tables (both at a clinical and policy-level). Nurses are highly educated professionals and enabling them to actively pursue continuing education and professional development opportunities also signals value. Acknowledging and supporting nurses as leaders within the health care system was seen as vital to a sustainable system and quality care.

Prior to the pandemic, research found many nurses experienced moral, professional, and ethical injury due to their occupational responsibilities (e.g., the conflict between the care they have the ability to provide in their current work environments and what they deem best practice). According to one key informant: **“The same issues have been issues for 30 years; however, when there is a surge, these issues become a crisis”**. These factors can create a lack of agency for nurses and thus an inability for them to demonstrate their value. This was commonly described as a reason why nurses consider leaving patient-facing roles or the profession altogether. Several of the leaders reflected that the historical social positioning of nursing, it being a female gender dominant profession and the systemic issues of equity, diversity, and inclusion inherent in that, may play a role in the culture of nursing (e.g., **“[Healthcare burnout] disproportionately affects**

women because nurses are mostly women"). It likely also impacts their representation both within respective organizations and among the public thus impacting the value of nursing across the system.

Currently, according to many of the key informants, there are few professional development opportunities and if there are, nurses are unable to take advantage of them due to work schedules and no allotment of time for continued education (e.g., **"Excessive overtime; even pre-pandemic, asking nurses to work 12-14 hr days with no breaks and overtime on their days off"**). This is not exclusive to clinical professional development but extends to leadership development opportunities as well as opportunities to innovate and contribute through academic and research work. This also impacts on the time that allows experienced clinical nurses to develop their own skills to provide mentorship to early career nurses.

The perception (both at an organizational and public level) must be that the role of the nurse is more than a commodity to fill a shift or move around floors and units, but rather a deliberate acknowledgement of their knowledge, skills, and expertise. Ensuring nurses are adequately compensated for knowledge, skills and accountability, and that nursing in particular service areas (e.g., rural or remote areas, where it is harder to attract and retain nurses) is incentivized. Strengthening supports offered for nurses' mental health and resilience were also mentioned as a means of supporting the workforce and demonstrating value for nurses' work. Reducing the stigma toward mental health and barriers inhibiting treatment seeking/resource access is essential to support the mental health and well-being of nurses.

Findings from Case Study (Nova Scotia & Saskatchewan)

Migration of nurses outside of health organization (Nova Scotia & Saskatchewan)

Key findings: Most interview respondents had observed out-migration of their nursing colleagues; however, this did seem to be dependent on region, role/specialty and/or where the nurse was in their personal life (e.g., raising a family, near retirement-age, etc.). Out-migrations were noted by nurses working in long-term care, ER, ICU, acute and critical care.

Respondents specifically mentioned the following issues that have impacted the migration of the nursing workforce:

- Mental and emotional well-being
 - increase in anxiety and stress
 - increase in workload and strain
- Safety concerns
 - short staffed and few resources
- Lack of work-life balance
 - scheduling issues, lack of flexibility
- Other opportunities
 - promotions, return to school, retirements
- Expansion in public health positions
 - less physically demanding
- Lack of manager support

- lack of trust and recognition
- Cancelled vacations or having to “give back five days”
- An abundance of new nurses who were not prepared for their roles (e.g., in complex care situations)
- Senior nurses making lateral moves into specialties with 9-5 schedules
- Higher turnover in younger nurses and / or not sticking with a particular specialty leading to knowledge gaps later
- High workloads resulting in a lack of time for senior nurses to mentor new nurses
- Senior nurses retiring early
- Burnout leading to self-focus and lack of teamwork
- Some nurses do not want to get vaccinated or to work with COVID patients which may cause some to retire early
- The nursing culture needs to shift its focus from recruitment to retention and quality of life for nurses
- A lack of regular feedback on performance is resulting in a culture of apathy with nurses not even keeping up standards of practice

Movement of nurses within the health organization (Nova Scotia & Saskatchewan)

Key finding: Internal movement of the nursing workforce mentioned by respondents included reassignments to units with shortages or high demand (e.g., COVID units), voluntary movement away from more demanding specialities (e.g., OR or LTC) to other areas with better working conditions and movement to casual roles so nurses would be guaranteed to have time off and more control over their hours. This internal movement was not always supported by management.

Respondents specifically mentioned the following detailed dynamics connected to internal movement:

- Certain specialties or units are undesirable and avoided due to high workload
- Senior nurses facing transfer to COVID units during the pandemic opted to retire early instead
- There has been an unusually high amount of disability leaves during the pandemic
- Nurses who were floated to other units outside of their specialty were not given proper orientation and instead opted to call in sick from of fear of losing their licenses
- The reasoning behind reassignments were not communicated to nurses leading to speculation
- Some supports were promised during the first wave (e.g., nurse advocates) but were never delivered
- Where clinical trainers were present on units, movement was less

Contributing factors to nurses leaving their positions or organizations (Nova Scotia)

Nurses’ responses to exit interviews from Nova Scotia were analysed using a descriptive approach to highlight key factors affecting nurse wellness and retention. Several factors are noted below in Table 11.

Table 11: Contributing factors to nurses leaving their positions or organizations in Nova Scotia

Exit Interviews from Nova Scotia Health (2021) and IWK Health Centre (2021)
<ul style="list-style-type: none"> • Mental and emotional well-being <ul style="list-style-type: none"> ○ increase in anxiety and stress ○ increase workload and strain • Safety concerns <ul style="list-style-type: none"> ○ short staffed and few resources • Lack of work-life balance <ul style="list-style-type: none"> ○ scheduling issues, lack of flexibility • Other opportunities <ul style="list-style-type: none"> ○ promotions, return to school, retirements • Expansion in public health positions <ul style="list-style-type: none"> ○ less physically demanding • Lack of manager support <ul style="list-style-type: none"> ○ lack of trust and recognition

Objective 2: Identify policies and strategies that have been implemented or recommended to address nursing shortages and exoduses in Canada

Findings from Directed Literature Review

Policy recommendations and strategies to address nursing shortages

Key findings: A wide variety of interventions were recommended in the literature to address nursing shortages and causes. Commonly, interventions within the literature were aimed at **improving support for new nurses**, either through internship/residency programmes or orientation/transition to practice programmes that last between 27–52 weeks, with a teaching and mentorship component.

Studies suggest better intersectoral cooperation among governments healthcare institutions and nurses to create consistent policies and regulations across the country, which may reduce nurses moving between jurisdictions for better pay or incentives.

Systematic reviews recommend that the design of a family-friendly, supportive learning environment that values and nurtures its nursing staff is critical to improve nurse retention and improved patient outcomes.

Based on a network meta-analysis, work environment and organizational commitment were recommended to reduce voluntary turnover.

Policy recommendations made by authors of the scholarly and grey literature were organized into five key domains for policy interventions to improve nursing shortages (International Council of Nurses, 2006; Oulton, 2006), including:

1. Funding policies

2. Workforce policy and planning, including regulation,
3. Work environments
4. Retention and recruitment
5. Leadership
6. Education & Training

During analysis, an additional category was developed to increase sensitivity of categorization (i.e., to be more specific with organizing recommendations). Education & training was added for recommendations that addressed the education of trainee nurses, the transition of new nurses from training to practice, and educational initiative intended for skill development. See Table 13 for a summary of recommendations from articles.

Funding policies

Seven articles were found that included macroeconomic (provides a stable economic environment to foster sustainable economic growth) and health sector funding policy recommendations. Most focused on increasing nursing remuneration to better reflect the workload, accountability, and responsibility of nurses. Other articles included recommendations that targeted increased funding for nurse education and support for nurses transitioning from education to practice. Park and Yu (2019) recommended better cooperation between governments and healthcare institutions such that policies are consistent across the country, and this may reduce nurses moving between jurisdictions for better pay or incentives.

Workforce policy and planning, including regulation

Workforce policy and planning was the most cited policy category. This category focused on improving the staffing and scheduling of nurses through various approaches which ranged from fixed staffing ratios (Borneo et al., 2017) to adopting a self-scheduling strategy such as those found in Magnet hospitals that are designed to empower nurses to take the lead on patient care and be an institutional driver for change (Chan et al., 2013). Policies that promote standardization of nursing regulations and education across settings and jurisdictions, increase nursing autonomy, and improve the transition from trainee to practicing nurse were also suggested. This category also focused on policies that involved collecting and analyzing data to better understand why nurses are leaving the profession. It highlights the role of nurse managers as monitors of nurses' intentions to leave and monitor how changes in the workplace may influence these intentions (Duffield & O'Brien-Pallas, 2003). Monitoring may be done through regular surveys, questionnaires or exit interviews.

Work environments

Work environments category mostly included recommendations to improve job satisfaction of nurses in the workforce by better valuing nurses and their roles (Bimpong et al., 2020), empower them in decision making (Flinkman et al., 2010), and generally make the workplace more friendly (less competitive) and supportive (Moseley et al., 2008).

Retention and recruitment

Retention and recruitment recommendations were focused on retaining new nurses through the use of evidence-based transition programs or preceptor programs (Salt et al., 2008) for trainee nurses when being placed in a practicing nurse role. These approaches should account for the specific role and context they are transitioning to (McDonald & Ward-Smith, 2012). Additional recommendations include implementing retention strategies during admissions process, continuing them throughout the training, and increasing the requisite qualifications of nurses entering training (Mooring, 2016).

Leadership

The category of leadership focused on educating leaders in emotional intelligence to ensure leaders have the relational skills to be supportive, encouraging, and focused on well-being of nurses (Cowden et al., 2011). Leadership capacity building and sustainability to advance leadership practices that result in healthy outcomes for patients/clients, organizations, and systems; the system resources that support effective leadership practices; the necessary organizational culture, values and resources that support effective leadership practices; and the policy changes at both the organizational and system levels needed to support and sustain leadership practices (RNAO, 2013).

Healthcare organizations are suggested to hire leaders that emphasize the mission and values of the nursing role (Grimm, 2021).

Education and Training

Education & training emphasized equitable access to high quality education and development throughout nursing careers and at all nursing levels (Meadows et al., 2000; McDonald & Ward-Smith, 2012). Education during the transition from trainee to practicing nurses was highlighted, including 3-6 month long preceptor programs (Salt et al., 2008) with features such as slow transition to high severity patients, positive feedback and support, opportunities to expand knowledge, and an evaluative approach to monitor progress (McDonald & Ward-Smith, 2012). There is a great need to have educational infrastructure to produce enough quality nurses, make nurses more effective (e.g., through residency programs), and have good working conditions (Park & Yu, 2019).

Table 12: Select Policy Categories and Recommendations

Policy Category	Examples
Funding	<ul style="list-style-type: none">• Better remuneration (to accurately reflect workload, accountability and responsibility (Chan et al., 2013; Littlejohn et al., 2012; Park & Yu, 2019; Bimpong et al., 2020; Jacobs, 2021).• Increase funding for nurse education, transition, and additional funding for employing and supporting nurses (Australian College of Nursing, 2021; Lavoie-Tremblay et al., 2021).• Cooperation between governments and institutions (Park & Yu, 2019).• New pay agreement implemented at national level• New pay rewards

<p>Workforce policy and planning, including regulation</p>	<ul style="list-style-type: none"> • Modernize professional nursing regulation (e.g., harmonize nursing education and credentialing standards, interoperable systems for regulators)(WHO, 2020) • Create a unified workforce across occupation and disciplines to identify the skills and roles needed to meet identify services (Park & Yu, 2019; Littlejohn et al., 2012). • Staffing levels should not be considered as a fixed ratio, rather a systematic approach which triangulates a planning tool, guidance for different settings, and the professional judgement of nurses (Bimpong et al., 2020; Borneo et al., 2017). • Self-scheduling strategy (Magnet hospitals – USA and Taiwan) as a means of reducing staff turnover and supporting retention(Chan et al., 2013) • Mandated nursing staff ratios, including one nurse to three patients (1:3) in emergency departments and 1:4 on other wards (NSW Nurses & MidWives Association, n.d.). • Increasing funding for new nurse transition to practice (Australian College of Nursing, 2021) • Avoid layoffs as a strategy to balance budgets (Alameddine et al., 2012). • Policies promoting nurse control and autonomy (Meadows et al., 2000) • Leaders and policy makers need to develop and apply a better understanding of nursing labour market dynamics to inform their decision making during economic downturns to protect the long-term interests of the healthcare system (Alameddine et al., 2012) • Nurse managers should regularly monitor leaving intention in their organizations, for example with survey questionnaires or as a part of developmental discussions (Xu et al., 2021). • Human resources managers can identify reasons for turnover intention, thus allowing the development of context-specific interventions to prevent actual turnover. • Exit interviews should be performed to help managers understand the causes of nurse turnover. • Good data collection to monitor the policies, and tailoring policies to the local context (Park & Yu, 2019).
<p>Work environments</p>	<ul style="list-style-type: none"> • Improving job satisfaction through various measures (Han et al., 2018; Hutchinson et al., 2012; Xu et al., 2021). • Valuing and empowering staff: appreciating and rewarding individuals to eliminate feeling taken for granted (Bimpong et al., 2020; Moseley et al., 2008) • Flexible working and a family-friendly, supportive, & safe working environment (Meadows et al., 2000; Nevidjon & Erickson, 2001). • Ensuring staff are ethically supported and able to take control of the care they provide (Schluter et al., 2008). • Flexibility and family friendly policies, social hours, and professional autonomy helped retention of higher qualified nurses (Chenoweth et al., 2010). • Change the name of the occupation to emphasize the professional and technical nature of the work (Conaway, 2001). • Create stable work groups for nurses newer to the organization can allow for faster transition to practice (Nei et al., 2015). • Managers and peers willing to advocate for each other in ethically difficult situations (Schluter et al., 2008)
<p>Retention and recruitment</p>	<ul style="list-style-type: none"> • Adapt existing evidence-based transition programs to account for the context within the healthcare organizations and meet the needs of new graduates (McDonald & Ward-Smith, 2012). • Use the EB-BMP framework (evidence-Based Best practice Medicine Framework) for clinical placement resources (Chenoweth et al., 2010) • Preceptor program models focused on New Graduate Nurses that are 3-6 months long (Salt et al., 2008) • Retention should start at the admissions process and extend throughout the curriculum (Mooring, 2016). • Recruitment of more qualified applicants: entrance exams; increased GPA and minimum math and science scores (Mooring, 2016).

Leadership	<ul style="list-style-type: none"> • Hire leaders who possess relational skills or provide training to existing leaders (Cowden et al., 2011; Australian Government, 2014; Cummings, Lee et al., 2021). • Healthcare organizations need to ensure they are led by individuals and teams who display relational skills, concern for their employees as persons, and who can work collaboratively (Cummings, MacGregor, et al., 2010; Cummings, Tate, et al., 2018). • Transformational leadership; motivate, mentor, encourage, and promote your staff's wellbeing (Rolle Sands et al., 2020) • Emphasis on the mission and values from the nursing (Grimm, 2021)
Education and training	<ul style="list-style-type: none"> • Education, training and development: Equal access to high quality training and development at all levels (Meadows et al., 2000; McDonald & Ward-Smith, 2012). • Preceptor program models focused on New Graduate Nurses that are 3-6 months long (Salt et al., 2008) <p>Key features of successful transition/orientation programs include (McDonald & Ward-Smith, 2012):</p> <ul style="list-style-type: none"> • Evaluation of baseline knowledge and program outcomes • Slow introduction to high-acuity patients and high-stress situations, • Gradual build up to full caseload • Positive direct support from an experienced nurse mentor and colleagues • Opportunities to clarify and expand knowledge <p>Educational infrastructure to produce enough quality nurses, make nurses more effective (e.g., through residency programs), and have good working conditions (Park & Yu, 2019).</p>

Implemented health system strategies to address nurse shortages

Key findings: Current evidence shows that policy effectiveness varies greatly, highlighting the need for more evidence. Results indicate that policy assessments should focus on the effectiveness of qualitative as well as quantitative aspects of the nursing workforce. Studies suggest it is necessary to selectively invest in rural areas where shortage of nurses is most prevalent.

Here we present examples of government-led initiatives to address nursing shortages found in the literature of select countries. This is not a comprehensive set of implemented initiatives. Four initiatives addressing recruitment and retention found that promoting supportive work environments as well as financial incentives were effective in increasing recruitment. Three initiatives that focused on education found that mentorship programs were effective in supporting nurses who are entering the workforce. One initiative that focused on workforce planning in the UK demonstrated that a minimum overall nurse-to-patient ratio of 1:2 for HDU patients and 1:1 for ICU on all shifts helped reduce workloads. Appendices C-F describes these initiatives in more detail.

Strategies pending implementation

Key findings: Despite being highly recommended, macroeconomic and health sector funding policies as well as leadership policies were not found amongst literature of implemented strategies to address nurse shortages.

Recommendations from the findings propose that macroeconomic and health sector funding and leadership policies could increase supply to the workplace and improve retention in the workplace, respectively.



Findings from Jurisdictional Scan

Policy recommendations and strategies to address nursing shortages

Key findings: Nursing organizations in Canada have made several recommendations since 2000 to address nursing shortages. Creating policies in the workplace have been most commonly recommended and include limiting overtime, reducing workload, and creating mentorship programs. Recommendations also tended to include strategies to educate/recruit/retain nurses and to create positive practice environments.

The jurisdictional scan identified 46 key documents that were produced by national, provincial, and territorial nursing organizations across Canada to address nursing shortages (between January 1, 2000, and August 2021). Figure 7 shows the number of documents produced over time (in 5-year intervals), and Figure 8 shows the jurisdiction(s) for which the recommendations were made. There was a noted increase in key documents produced in the 2005-2009 period and the 2020-present period. These increases coincide with times of nursing shortages in Canada. There were 18 key documents in the current time period, the highest of any investigated. Ontario put forth the largest number of key documents (n=14), followed by Canadian organizations (n=9), British Columbia (n=5), and Quebec (n=4).

Policies to target the workplace were the most recommended overall (n=28), most commonly in the 2000-2009 and 2020-present time. Policies to target recruitment and retention were the next most frequently recommended in 22 key documents; policies to target education and training were recommended in 19 key documents and policies to target positive practice environments were recommended in 18 key documents. Policies related to nurse leadership were less frequently recommended (n=8).

Figure 6, below, illustrates the distribution of actions over time periods in Canada. If a government had at least one policy in the time frame of interest, they are marked as having policies to address nursing shortages in that period. (colour coding on the map: yellow = 1 policy; orange = 2 policies; red = 3+ policies)

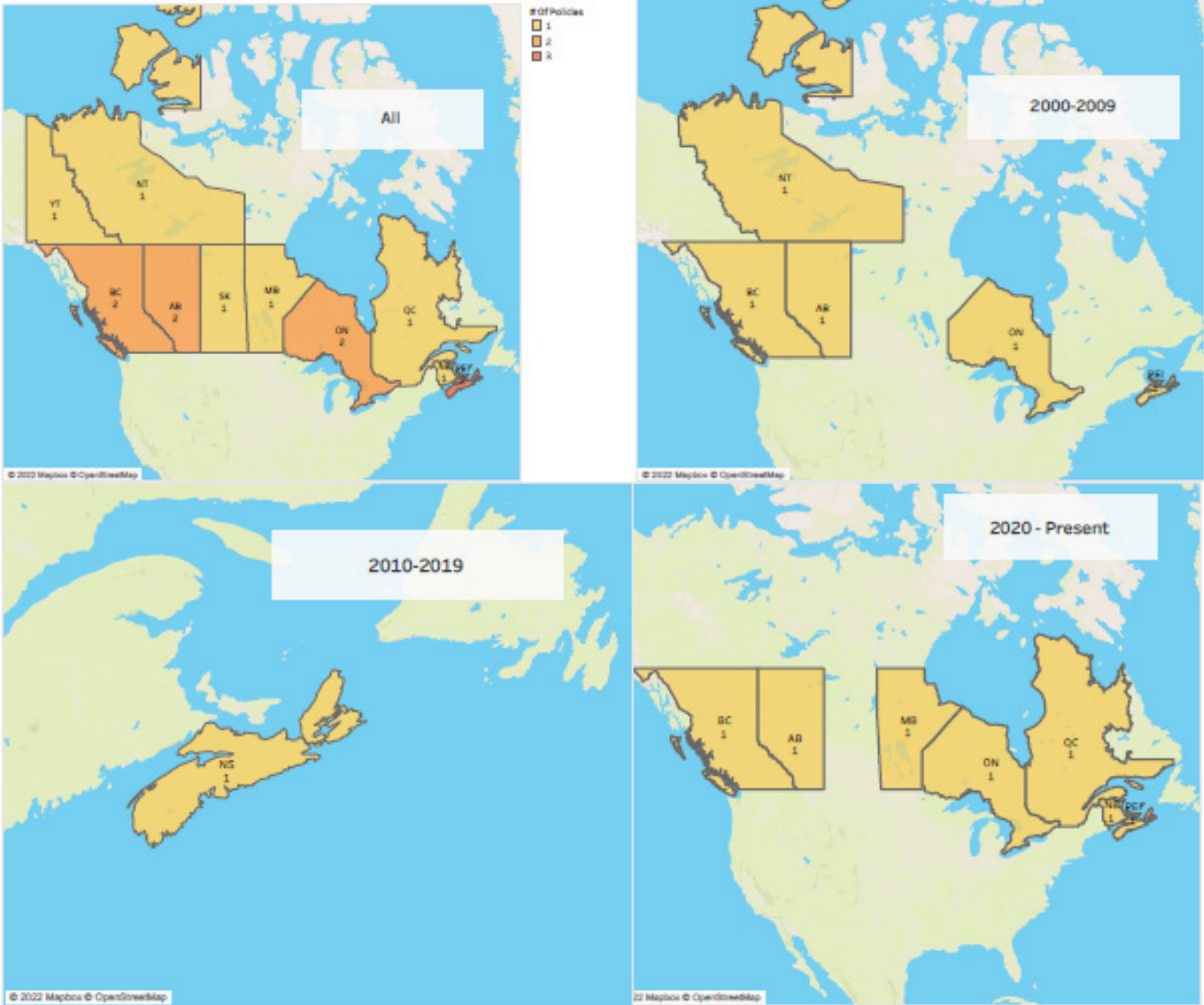


Figure 6: Distribution of actions over time periods in Canada

Trends over time:

Workforce policy and planning

In all time periods, there has been:

- A call to reduce workload, reduce overtime, and ensure nurses are given the holidays they have earned
- An emphasis on making internships or mentorships available to new nursing graduates to support their learning and ease their transition to practice

In the 2005-2009 period:

- Much of the discussion centered around improving efficiencies (e.g., reducing absenteeism; allowing nurses to focus on nursing tasks and reduce time on non-nursing duties; offering full time employment to all nurses who wanted full time employment; discouraging casual employment)

More recently:

- There has been an interest in creating databases to facilitate evidence policy and planning of human resources
- There has also been an interest in offering childcare

Work environments

In all time periods, recommendations have focused on:

- Supporting health and wellness
- Addressing workplace violence and harassment
- Creating safety policies

Between 2000-2009:

- There were calls to deliver care in team-based environments (e.g., collaborative care models)
- There were also calls related to increasing the scope of practice for certain nurse specialties (e.g., nurse practitioners)

Recruitment and retention

In all time periods:

- The two most common recruitment and retention strategies relate to the recruitment of internationally educated nurses and the provision of incentives
- With regards to international nurses, there was a focus on the ethical recruitment of international nurses. There were also suggestions to build capacity within Canada instead of relying on international nurses.
- Incentives typically involve financial rewards for nurses who work in hard to staff places and units, and communities (e.g., relocation bonuses, tuition re-imbursment for recent graduates, extra pay)
- Removing barriers to practice (e.g., accelerating the process of credentialing, processing work permits and placements for nurses trained in Canada and internationally educated nurses).

Leadership

In all time periods:

- The recommendations around leadership have tended to be non-specific
- Training and senior mentorship support related to quality and safety, risk assessment, and informatics

- There have been suggestions that clear succession plans need to be in place to allow the next generation of nurse leaders to develop

More recently:

- There have been calls to establish a Chief Nursing Officer in Canada
- There have also been calls to create federal agencies that can support nurses (e.g., health workforce agency)

Education and Training

In all time periods:

- Nurse organizations have recommended that enrollments increase in baccalaureate programs and specialty programs. Long term care has been specifically targeted as an area where nurses need to be trained.
- Enrollments also should look at:
 - Increasing graduate degrees for nurses
 - Increasing the number of nurse practitioners trained
 - Supporting the continued education for nurses
 - There has also been an interest in building capacity in certain communities (e.g., Canada's north)

Implemented approaches to address nursing shortages in Canada

Workforce policies and planning

- Developing mentorship programs for nurses
- Alberta has mandated no overtime and the cancellation of holiday during periods of crisis

Recruitment and retention

- Providing financial incentives for nurses to relocate to hard-to-staff areas
- Increasing the number of full-time positions at hospitals
- Recruitment programs for international nurses

Education

- Creating more nursing programs
- Increasing the number of seats in nursing programs
- Improving educational opportunities for nurses in specific specialties (e.g., long term care)
- Developing bridging courses for nurses who want to work towards advancing their education/training

Findings from Key Informant Interviews

Findings from Key Informants indicate that factors affecting nursing shortages, turnover, and internal movement within organizations have multiple and intersecting issues that have contributed to overall burnout and eventual migration of the nursing workforce at large.

Recommendations to address nursing shortages: Pan-Canadian Leadership and Data Collection

Key findings: According to key informants, a pan-Canadian nursing strategy and leadership as well as current and relevant data can support a better understanding of the challenges currently facing the nursing workforce and ways in which nursing can continue to be valued as a key member of the healthcare system.

Re-establishing a federal nursing office (with a chief nurse executive role) was mentioned as an approach to influence a national strategy on nursing workforce planning, workforce development and related actions; this was acknowledged as an approach used in other jurisdictions.

Per the key informants, many organizations and planners relying on CIHI data to understand the workforce in their jurisdiction may have difficulty applying it because this data is often skewed to full-time equivalents, and not actual nurses needed to fill roles, leading to poor planning resulting in chronic shortages across the board. Due to this lack of data or inadequacy of existing data forms, the staffing ratios, qualifications, and skills required to meet the needs of patients and their families are difficult to project, and planning errors directly impact patient care and provider outcomes.

Findings from Case Study: Interviews with Nurses in Nova Scotia and Saskatchewan

Policy recommendations and strategies to address the nurse exodus in Canada

Key findings: Recommendations regarding strategies to help stem migration varied widely amongst respondents. Most respondents pointed to improving nurse-patient ratios, skill mix, and workloads. Additional recommendations mentioned were: reinstating a Chief Nursing Officer (CNO) for Canada and CNOs across the country for consistent with regional consistency in leadership; improved mentorships for new nurses; involving nurses directly in planning and strategy; improving skill sets for nurse leaders and managers; increasing collaboration within the profession at all levels;

Notable responses include:

- Many respondents urged a pan-Canadian implementation of the Best Practice Organization® (BPSO®) Program
- Repeal Ontario's wage suppression legislation (bill 124) as a damaging pre-pandemic government policy affecting retention of nurses during the pandemic
- Focus on BIPOC within nursing and nursing leadership

Findings from Case Study: Exit Interviews in Nova Scotia

Policy recommendation and strategies to address the nurse exodus in Canada

The experiences described by nurses during exit interviews in Nova Scotia point to several promising practices that could serve to promote nurse wellbeing and retention, including:

- **Engaging patients and staff in point-of-care roles in policy and decision-making** to ensure the prioritization of person-centered care in health system administration
- Deploying **supportive managers** who are present within units, attentive and responsive to nurses' needs and concerns, and capable of encouraging their staff to attain their best

performance. This speaks to the need for clinical leader roles that are permanent and are familiar about the practice and patients and the needs of the community.

- Fostering **positive work environments** characterized by strong leadership and inter/intra-professional communication and collaboration
- Ensuring that nurses' contribution to care delivery is **respected and recognized** by their colleagues, their organizations, and system administrators
- **Increasing staffing levels** to moderate workloads and enable nurses to provide care that meets their personal and professional care standards
- Acknowledging and addressing nurses' **increasingly complex working conditions**, characterized by high patient acuity, the demands of pandemic response, and incidents of workplace violence
- Supporting nurses' **work/life balance and wellness** by allocating appropriate workloads, limiting overtime, ensuring access to adequate time off, and offering flexible work hours and schedules
- Offering desirable **work contracts**, including job security, competitive remuneration and benefits, and flexible work arrangements
- Investing in the **mentorship and orientation** of new staff to confer the knowledge and experience required to successfully execute their position
- Providing nurses with opportunities for **training, professional development, and career advancement**
- Enabling nurses to benefit from the **job rewards and satisfaction** associated with providing high quality care to their community

Objective 3: Examine the effectiveness of policies and strategies to address nursing shortages and exodus in Canada, including the experiences of nurses with policies and strategies, shortages, and the exodus from the profession

Findings from Directed Literature Review

Effectiveness of Implemented health system strategies to address nurse shortages

Key findings: Current evidence shows that policy effectiveness varies greatly, highlighting the need for more evidence. Results indicate that policy assessments should focus on the effectiveness of qualitative as well as quantitative aspects of the nursing workforce. Studies suggest it is necessary to selectively invest in rural areas where shortage of nurses is most prevalent.

As described previously, four initiatives address recruitment and retention and found that promoting supportive work environments, as well as financial incentives were effective in increasing recruitment. Three initiatives that focused on education found that mentorship programs were effective in supporting nurses who are entering the workforce. One initiative focused on provided a supportive work environment by using the "magnet model" of workforce design which resulted in increased self-efficacy, and organizational commitment. One initiative that focused on workforce planning in the UK demonstrated that a minimum overall nurse-to-patient ratio of 1:2 for HDU

patients and 1:1 for ICU on all shifts helped reduce workloads. Supplemental Material document describes these initiatives in more detail.

Findings from Case Study: Interviews with Nurses in Nova Scotia and Saskatchewan

The impact of policies and strategies on migration and movement

Key findings: Policies regarding wage cuts, techniques used for workload measurement, applications of interdisciplinary and interprofessional care that increased nurses' workloads were cited as influencing migration. Responses varied by individual respondent, role, speciality, and region, however, there were more consistent concerns voiced regarding policies for reassigning nurses to other units and how, particularly during COVID, these reassignments were implemented and communicated.

Policies and directions that have impacted the migration of nursing include:

- Plans to increase the number of nursing positions through a combination of upping international licensing recognition and increasing seats in nursing degree programs and elsewhere has an impact on clinical educators and mentors across organizations. Many of those who teach nurses are exploited. They are often kept at instructor rank and employed through a series of limited terms, meaning they have no access, for example, to research/study leave. They are overworked and poorly paid.
- There is a lack of understanding by government and other stakeholders regarding workload and how to measure it. One respondent stated that SBAR tool (situation, background, assessment, recommendation) are currently used within Nova Scotia Health, but they are not a good indicator of workload.
- Interdisciplinary care is not as effective as it should be. For example, initial physiotherapy/occupational therapy (OT) assessments happen, but burden is on nurses to follow up on action. Nurses must cover for physician shortages which can force them to act outside of their scope of practice.
- Clinical nurse manager roles have changed with the addition of new responsibilities (multiple units, budgets, etc.) making them less available for ground level support when needed.
- Nurses are floated to units with staff shortages. Some call in sick as they are not ready or prepared to work in another unit.
- Many respondents reflected on the imposed shifting of nurses from one unit to another and stated that when a nurse is floated to another unit, they are not given adequate orientation (if any) for the new role. This creates concern for their license because the shift is often to a unit with high acuity patients (e.g., pulling nurses into critical care despite limited experience). Respondents concerns regarding their ethical and moral obligation to provide care they are trained to do is challenging to many.
- Respondents in several surveys raised the concerns with skill-mix, indicating that not having adequate RN staffing affects their workload, capacity to provide safe and quality care, and adds stress (RNAO, 2021d; Sharplin, Adelson, & Fish, 2022; Sharplin, Adelson, & Jarvi, 2022).

Summary of Findings

Directed Literature Review and Jurisdictional Scan

- The nursing shortages in the selected countries are different but share underlying factors influencing shortages. Differences in health system arrangements in each country may necessitate tailored policy options for each. Results did show that recommendations to address shortages have been similar among the selected countries since 2000.
- This review has highlighted the need to make nurses a central focus in the health system, as the care of nurses as individuals and as a group appears to have been deprioritized (indicated by the lack of policies intended to address the needs of this workforce).
- Government action tends to focus on education and recruitment and retention efforts, and not on system-level changes or workplace reform.
- Based on a network meta-analysis a supportive and communicative leadership, , and organizational commitment are the best recommendation to reduce voluntary turnover.
- A reduction in nurses' workloads that creates a more realistic workload, may boost job satisfaction, and lessen fatigue, encouraging nurses to stay in the profession longer.
- A great deal of research suggests more developed leaders are needed to support nurses in the workforce, indicating a more stringent selection process should be employed when recruiting leaders and managers.
- The provision and retention of more experienced nurses may provide more opportunities for junior and novice nurses to have more options in finding effective mentors that may in-turn support retention.
- Reviews of multiple interventions indicate that a multi-pronged approach is more effective than single interventions and policies.

Key Informant Interviews

According to key informants, "valuing" nursing perspectives and expertise means ensuring nurses are represented at planning and decision-making tables (both at a clinical and policy-level). Nurses are highly educated professionals and enabling them to actively pursue continuing education and professional development opportunities also signals value. Acknowledging and supporting nurses as leaders within the health care system was seen as vital to a sustainable system and quality care.

Re-establishing a federal nursing office (with a chief nurse executive role) was mentioned as an approach to influence a national strategy on nursing workforce planning, workforce development and related actions; this was acknowledged as an approach used in other jurisdictions.

Per the key informants, many organizations and planners relying on CIHI data to understand the workforce in their jurisdiction may have difficulty applying it because this data is often skewed to full-time equivalents, and not actual nurses needed to fill roles, leading to poor planning resulting in chronic shortages across the board. Due to this lack of data or inadequacy of existing data forms, the staffing ratios, qualifications, and skills required to meet the needs of patients and their families are difficult to project, and ideal full-time equivalency to accomplish this is unknown. The creates planning errors that directly impact patient care and provider outcomes.

Case Study (Nova Scotia & Saskatchewan)

Many respondents in the interviews with nurses in Nova Scotia and Saskatchewan observed significant enough migrations to cite multiple migration paths and drivers. Where migration was observed it was either to other units, other regions (within our outside of Canada) or outside of the profession (retirement, other career paths, etc.). Positively associated with migration were burnout, poor work-life balance, inadequate support or training, negative culture, lack of autonomy and nurse opinions not being valued by management. Negatively associated with migration were better pay, more desirable working conditions, high demand elsewhere (e.g., COVID testing units), commitment to co-workers, supportive nurse management and higher workplace satisfaction. Respondent's comments point towards pay disparities across provinces / jurisdictions which would influence these dynamics and movement patterns.

The analysis of nurse exit interview data from Nova Scotia supports that migration of nurses has changed during the COVID 19 pandemic.

Nurses described movement within their workplace as being higher resulting in suboptimal personal and professional outcomes. This is of major concern given the mental and emotional strain they describe and their perception of a lack of organizational readiness to meet ongoing healthcare demands of the pandemic. Their motivation to "leave" was multifactorial:

- The most frequently cited motives to "leave" were a lack of emotional wellbeing, staffing shortages causing an increased workload, skill-mix concerns adding workload and patient safety concerns, and a lack of presence from nurse managers.
- Some nurses described the examples as impacting their reason to stay in the profession.

Review Considerations

Directed Literature Review and Jurisdictional Scan

1. Systemic changes to the conditions in which nurses work and policies related to remuneration and structural valuing of the workforce may help prevent future nursing shortages. Making improvements in interdepartmental and intersectoral policies that support the nursing workforce, ensuring greater interdisciplinary education and smoothing the transition of new nurses into practice could help mitigate the harmful impacts of nursing shortages during times of crisis.
2. Future nursing related policy developments should include nurses in the formulation.
3. A nurse retention strategy should ensures ongoing and targeted efforts to recruit and retain. Policies that focus on new nurses entering practice, retention strategies for experienced nurses and older nurses considering early retirement are considered important.
4. An identified gap in document analysis but an area of need is to develop / strengthen existing strategies and policies that can focus on recruitment and retention processes to address racialization and include EDI considerations.

Key Informant Interviews

1. Structural valuing of the nursing workforce within the healthcare system: in clinical expertise and policy development; by enabling active pursuit of clinical and professional development

opportunities; as a critical component in the quality and sustainability of our healthcare system.

2. Supporting a pan-Canadian data repository that collects relevant and contemporaneous data to support the nursing workforce. CIHI was universally mentioned as an important stakeholder in nursing workforce development to support a better understanding of the issues facing the nurse workforce through access to better, timely data and nursing sensitive metric.

Case Study (Nova Scotia & Saskatchewan)

1. Coordinated national and regional approaches to recruitment and retention of nurses
2. Strengthen here-and-now relevant training and professional development on-site for nursing
3. Support a policy to replace the first nurse who misses work due to illness on units to prevent unnecessary overtime

The salient points arising from this analysis are centered on creating new strategies and how they link to inter-pandemic nurse experiences. Given the significance of the nursing agenda, the following considerations will help to shape future research, policy and/or practice.

1. Variation exists on how provinces define and track nurse migration nationally and at local level.
 - a. Strengthen the national definition of nurse migration and the metrics associated with it.
 - b. Apply a national definition and metrics locally to inform decisions and actions.
2. The calls to act and address the global nursing workforce shortage made prior to 2020, have been addressed with band-aid solutions. Additionally, any momentum gained has been lost due to the pandemic.
 - a. Create a national repository of nursing workforce related solutions that come from a nurse advisory council which includes key partners (i.e.: service providers, government, unions, academia, associations, colleges, nurses, patient/family/community representation).
 - b. Ensure the advisory council is nimble and adaptable to act quickly on key issues for nurses.
3. Nurses require better work-life balance now, more than ever.
 - a. Prioritize key nursing issues, related to well-being and the mental health of our nursing workforce.
 - b. Dedicate attention on entry level nursing workforce to improve the transition from training to practice.
4. Nurses require solutions to their housing challenges, childcare issues, access to healthcare for their themselves and their family, and flexible work situations, more than financial incentives.
 - a. Identify the many factors combined to affect the health of nurses and design better recruitment and retention strategies.

Limitations

Directed Literature Review and Jurisdictional Scan

- Both searches are limited by the search strategy and time.
- Due to the context of a rapid review, the search is not comprehensive and is not intended to represent the entire body of literature on the topic of nursing shortages. There likely are articles in additional databases that were not included. Additionally, the use of single reviewers for title and abstract reviews, full text reviews and data extractions increases the probability that articles may have mistakenly screened, and data points may be missed or inaccurately reported. No quality appraisal of the articles was completed therefore caution should be used when interpreting and applying the review findings.
- While the issues of racism, equity, diversity and inclusion were not explicitly identified as a major theme within this review, ongoing dialogue on inequities in health and healthcare points to them as being key contributing factors requiring immediate attention.
- The jurisdictional scan looked at websites of specific nursing organizations in Canada. Although at least two prominent organizations in all provinces and one in each territory were targeted we recognize we may have missed some important recommendations from Canadian nursing organizations. Our complementary Google search was designed to mitigate this and identify any missing documents, but this was limited to the first page of hits only. We also acknowledge the inherent limitations of using google to search for key documents.
- Moreover, even the organizations where we performed a targeted search may not all have recommendations proposed between 2000-present available. Information may not have been publicly available on the websites or available at all (e.g., may have been in a report that was not uploaded, or it may have been archived and not found by searching).
- Similarly, we may not have been able to identify all the policies that governments implemented.
- The recommendations presented in this paper are not all inclusive and may exceed limitations of this paper. Further research in nursing workforce planning is required to enhance the profession of nursing in Canada.

Key Informant Interviews

- Limited research is available on the perception of value for nursing across the healthcare system.
- Perspectives were received from fifteen (15) leaders across Canada with not all providing feedback.

Case Study

Nurse Interviews (Nova Scotia & Saskatchewan):

- Public health nursing workforce and relevant policies during the pandemic were not explored fully.

- The perspectives of patients and family members regarding nursing shortage was not explored in this report. Findings will reflect the relative heterogeneity of participants in terms of diversity and practice characteristics.
- The effects of the healthcare strain, for example, interpandemic difference in Nova Scotia versus Saskatchewan.
- The short timeline for the interviews impacted the depth of analysis and data collection strategies (for example, interviews were not recorded).

Exit Interviews (Nova Scotia):

- Exit interviews were not collected by our research team; thus, specific questions were not designed for the purposes of this study (COVID-19 and nursing shortage).
- Comparable exit interview data were not available from Saskatchewan; findings are specific to Nova Scotia.
- The exit survey findings were generated using a small sample of 30 nursing exit surveys and may not reflect the experiences of all nurses working within or outside Nova Scotia Health. More comprehensive research examining the experiences of nurses who have left their positions, or the profession, could serve to enrich our understanding of challenges driving turnover.
- Exit surveys do not reflect the experiences of those nurses who remain active within the workforce. Additional research examining the experiences of nurses who choose to remain within the workforce could serve to enrich our understanding of factors facilitating nurse wellness and retention.

Discussion

Evidence from this rapid review reinforces long-standing health system issues which have impacted the nursing workforce and are leading to the major crisis we are witnessing today—almost two years into the COVID-19 pandemic. Specifically, problems with recruitment and retention of nurses are a long-term issue, facilitated by job dissatisfaction that is often attributed to heavy workloads, lack of autonomy in nursing roles, and the psychological burden and moral distress nurses are experiencing. While these factors are well-documented in the academic literature dating back to the 1990s, few policies or interventions have been described that effectively address the nursing workforce crisis. This review has highlighted that although these issues are heightened during a crisis, a sustained attention is required to address the magnitude of what is an ongoing issue.

Several jurisdictional interventions are targeted at nursing recruitment and retention which included, for example:

- “The Nursing Graduate Guarantee” in Ontario which offers employers financial incentives to hire RNs in temporary full-time positions (Ministry of Health, 2021);
- the “Rural Health Professionals Program” in Australia aimed at recruitment more nurses to rural areas (Morell, 2014);
- The Best Practice Spotlight Organization@ (BPSO@) Program is a Canadian designation that empowers nurses and interprofessional teams to be change agents in their organization and across integrated system of care (RNAO, n.d.-d). BPSO@ champions lead the implementation of evidence-based practices through robust staff engagement using

implementation science (RNAO, n.d.-g). The BPSO@ program provides—free of charge—all the materials, continuous coaching and evaluation through an international data system,

- NQuIRE (RNAO, n.d.-h) delivering outstanding results since 2003 in Canada and in over 20 countries (RNAO, n.d.-b).
- Best Practice Guidelines Program includes clinical (RNAO, n.d.-e) and healthy work environment (RNAO, n.d.-c) evidence-based guidelines available free of charge on-line.

The COVID-19 Context

To help with the initial COVID-19 response, retired nurses in Nova Scotia were relicensed to work in testing or immunization clinics rather than in areas of acute care with complex patients. As the demand for nurses for the COVID-19 response has weaned, there are nurses who are leaving the workforce *again* to return to retirement. Others are choosing early retirement after the immense stress of the pandemic, which exacerbated long-standing working conditions and health system issues that contributed to nurse job dissatisfaction and poor mental health. Specifically, nurses were frustrated and stressed by the rigidity of their work life (e.g., vacation time not being honoured/little time off, and few people to cover workload which led to poor nurse-patient ratios and morale). Increasing pay during COVID-19 seemed to have little impact of the satisfaction of nurses we spoke with for this review—what nurses said they needed was time off for quality of life and mental health. Additionally, this rapid review affirmed that there is internal movement of nurses within healthcare organizations because they are seeking a more manageable role with more collegiality between staff, supportive leaders/managers, and the ability to serve their patients well by, for example, having adequate physical and staff resources. Nurses may choose to move internally within their organizations to maintain their pension and benefits (if available), others, choose to leave their organizations or the nursing profession entirely. The pre-pandemic literature confirms that retention issues of newly licensed nurses is a longstanding issue, as well as generational differences in the needs and turnover behaviours of nurses (McClain et al., 2020; Hayes et al., 2012). Post-pandemic, nurses re-evaluated what they are seeking from the profession and their work-life balance. As such, there are nurses (especially younger nurses) who have chosen travel nursing because it offers a lot of flexibility in terms of hours, location, length of contract, and the ability to travel to different places in Canada and with good compensation. These types of roles are more and more enticing for nurses who are able to move locations, at least temporarily.

National nurse professional leadership

Countries such as the England and Australia have deployed national nurse-led strategies to support the nursing workforce by, for example, appointing a Chief Nursing Officer (CNO) for the country. In Australia, the national nursing and midwifery approach includes strengthening rural health strategy and nursing presence in rural communities, and the development of national advanced practice nursing guidelines (Australian Government, 2021.; Office of the Chief Nurse and Midwifery Officer, n.d.). In England, CNO Ruth May, expressed concern about the inequalities Black and racialized minority nurses confront, raised by a report from the NHS Workforce Race Equality Standard programme (NHS, 2019; NHS, 2021). Canada does not collect comparable race and ethnicity-based data about the nursing profession. These examples provide insight into how a national nursing strategy could be implemented in Canada. Currently, the provinces and territories each adopt their own approach to supporting the nursing profession, e.g., by way of provincial/territorial CNOs.

Specialized skills training and advanced practice nursing

A key concern for nurses in this rapid review was the lack of preparation, especially amongst newly certified nurse graduates, to work in specialty areas of medicine and/or to manage complex patient scenarios. This general preparation meant that newly licensed nurses, or those new to specific areas of care, felt unprepared to take on these roles and lacked confidence to do their job well. This could potentially lead such nurses to move departments within the organization where they feel better prepared to do their jobs, or there is potential for nurses who stay in these roles to have increased stress and a higher risk to patient safety. It is important not only to have nurses trained in specialty areas, but to have advanced practice or specialized nurses with graduate-level preparation, who can provide mentorship and guidance to nursing staff in specialty and complex areas of care.

The goal of the specialized nurse practitioner (SNP) role is to improve quality of care for specific patient populations, from clinical care to follow-up and patient teaching (McNamara et al., 2009). Clarity regarding nurse specialty certification and contributions to clinical practice areas is needed to optimize advanced or specialty nursing roles within complex and collaborative health systems; there is mixed and inconclusive evidence about the impact of specialty nurse certification on patient outcomes and nurse retention (Whitehead et al., 2019). In Quebec, The PEPPA (participatory, evidence-based, patient-focused process for guiding the development, implementation, and evaluation of advanced practice nursing) framework was developed to support the implementation of the SNP role within the health system (McNamara et al., 2009). A national nursing strategy (as above), as well as at the provincial and territorial levels, may benefit optimization of nurses, from RNs to APNs (DiCenso et al., 2010).

A major report produced by RNAO in 2021 highlights that although NPs are the fastest growing classification of nursing in Canada, we lag far behind the United States (US) (RNAO, 2021a). The number of NPs in Canada increased 8.1 per cent from 2018 to 2019 compared to a 1.1 per cent growth for registered nurses (RN) and 3.6 per cent for registered practical nurses (RPN) during the same time frame. Still, NPs account for only 1.43 per cent of Canada's nursing workforce. In 2019, Ontario had the highest percentage share at 2.2 per cent, translating into one NP for every 4,444 residents or 22.5 NPs for every 100,000 residents.

The urgent focus on role optimization and scope expansion for NPs follows consistent and increasing evidence of NP effectiveness. As RNAO's political action briefing (RNAO, n.d.-j) indicates NP contributions to health and health care include:

- improved access to primary care and acute care
- comprehensive care for vulnerable, marginalized and underserved populations
- improved health and health-care cost outcomes across all sectors
- increased access to care, particularly in rural and remote areas

NPs have proven indispensable during this pandemic, providing comprehensive assessments including diagnostic testing and the formation of a diagnosis, treatment plans including palliative care, and when necessary referrals. NPs in an expanded role are working with greater independence and serving as attending NPs, clinical and medical directors in long-term care, and as most responsible providers in hospitals, with beneficial results (RNAO, n.d.-j).

The significance of RNAO's report extends beyond Ontario and Canada. With a framework grounded in the Quadruple Aim concept and the report's attention to the United Nations' Sustainable Development Goals, which strive to end poverty and ensure people's well-being, it serves to anchor the NP role as a champion for health and equity (RNAO, 2021a).

Supporting a diverse nursing workforce

Supporting diversity within the nursing workforce was a recommendation for better recruitment and retention in the literature and interviews within this review. For example, this review highlights the need for better recruitment of internationally educated nurses (IENs) already living in Canada. Ongoing barriers impact the recruitment and integration of IENs in the Canadian nursing workforce, such as difficult and costly licensing applications. Educational institutions are challenged with creating appropriate bridging programs for such students that are affordable and educationally sound (Canadian Immigrant, 2014; McMaster University, n.d.). Further, faculty are needed to support such bridging programs to help educate and do clinical placements for IENs who want to be certified in Canada. A national nursing leadership strategy may focus on recruitment and retention of IENs, as well as nurses from equity-seeking groups (BIPOC, 2SLGBTQIA+).

Limitations

The rapid review which informed this policy brief was completed during August and September 2021; due to the rapid nature of this review, this should not be interpreted as a comprehensive assessment of the issues that are impacting the nursing workforce. Rather, this review provides a snapshot of the nursing workforce challenges at a critical point in time during the COVID-19 pandemic and offers considerations that merit both immediate and further exploration. Another limitation is the lack of consensus in the language describing nursing shortage—what constitutes a nursing shortage, and related terms such as nurse migration and nursing turnover, or recruitment and retention of nurses is not well described in the literature which impacts interpretation of findings and comparisons across jurisdictions. Similarly, nursing is often categorized into one large profession (within the documents analyzed for this review), rather than a distinction made amongst the various specialities within nursing (e.g., RNs, NPs, LPNs, or speciality nurse roles such as mental health nurses), between the different educational backgrounds present within the nursing workforce (e.g. internationally versus domestically-educated nurses), and across the various sectors of care to which nurses contribute. While representation within the nursing profession was attempted for the additional components of this work, we are limited in our ability to interpret issues that may impact on specific specialties of nurses, on nurses with specific educational backgrounds, or on specific sectors of care. An equity, diversity, and inclusion lens (EDI) was applied to a literature search. Demographic data was not collected for qualitative interviews with nurses and stakeholders; future initiatives by this group will include a call for diverse participants and will collect demographic information, including age, race and ethnicity, gender, Indigenous identity, and other social identities. The application of a gendered lens on the nursing profession, retention, and shortage is necessary as the majority of nurses are women; not only did nurses experience burnout and stress during COVID-19, international data shows that COVID-19 exacerbated pre-existing inequities. Economic impacts of the pandemic affected women and girls earning less, caretaking needs of children and older adults increased of which women are predominantly responsible, and women and girls experienced higher rates of intimate partner violence during stay-at-home orders (United Nations, 2020).

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Appendix A: Nova Scotia Health Project Team

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Appendix B: Details of Key Document Analysis Methods

Search strategies

- The information sources searched include:
 - Bibliographic databases: Scopus
 - Grey literature—media websites, national and international health organizations (e.g., WHO, World bank, IHI, Observatory on Health Systems and Policies, McMaster Health Forum, COVID-END)
 - National Health Organizations (Health Canada, NSH, Australian government of health, New Zealand Government of Health, nursing associations (i.e., CNA) etc.)
 - Key stakeholder/expert recommendations
- Searches were documented using PRISMA-s reporting standards (i.e.: name of database or resources searched; date searched; any limits applied; number of results retrieved; full search history)

Screening protocol

- Screening stages:
 - Single Title/abstract screening
 - Single Full text screening

Data extraction

- In an excel spreadsheet / smartsheet
- The extraction form columns reflected the “key guiding questions”.
- Final data points
- Form was piloted before extraction to ensure all team members extracted data in the same way

Methodological assessment

- No quality assessment was conducted

Synthesis

- Written summaries were produced for data points that identified and described key findings/recommendations
- Descriptive analyses were used to determine the frequency of specific characteristics (e.g. types of documents; developer of documents; target audience)
- Content analysis was used for qualitative data and summarizing quantitative data

Eligibility Criteria

- Sources had to have been published since 2020 (onset of pandemic), in one of the time periods identified in Table 5.
- Study design: Systematic review, meta-analysis, narrative reviews, scoping review, or another type of literature review with an explicit methods section.

- Population: Nurses, including Nurse Practitioner, License Practical Nurse, Registered nurse, Family practice nurse, general practice nurse, nursing workforce, Advanced Practice Nurses (APN), Clinical Nurse Specialists (CNS).
- Context: Articles describing a nursing shortage (including turnover and attrition/retention issues)
 - Definitions of shortages
 - In economic terms, a shortage occurs when there is a labor imbalance between the quantity of a skill (nursing) supplied to the workforce and the quantity demanded by users. Many indicators may be used to indicate a shortage such as: vacancies, growth of workforce, occupational employment rate, turnover rates, population-based indicators, and overtime measures. It is suggested that a range of indicators are used to measure possible shortages (Zurn et al., 2004). Non-economic measures of shortages are often normative, such as a value judgement or professional determinations.
- Intervention: Articles had to include either policy recommendations or implemented policies intended to address nursing shortages.
- Outcomes: No articles were excluded based on outcomes
- Location: Articles had to include data on Canada, UK, Australia, U. or have an international focus.
- Timeframe: Sources had to have been published within 2 years of “crisis” year.

Time frames included below:

Jurisdiction	Time period 1 (literature timeline)	Time period 2 (literature timeline)
Canada	1996 (1996-1998)	2006 (2006-2008)
England NHS	1999 (1999-2001)	2015 (2105-2017)
Australia	2002 (2002-2004)	2016 (2016-2018)
United States	2000 (2000-2002)	2010 (2010-2012)

Articles were also provided by experts and working group members to help inform the review

Search Terms:

TITLE-ABS-KEY ((nurse OR nurses OR nursing) W/2 (shortage* OR understaff* OR “under-staff*” OR quit OR quitting OR leave* OR leaving OR left OR exodus OR (retir* W/1 early) OR ((switch* OR change* OR changing) W/1 (role OR roles OR position* OR job OR jobs)) OR crisis OR crises OR turnover OR retention OR retain*)) AND TITLE-ABS (((systematic OR scoping OR literature OR narrative) W/1 review*) OR metaanalysis OR “meta-analysis” OR retrospective OR overview*)

Extraction Template

1. Data extractor:
2. Full article reference (use Google Scholar to retrieve full citation):
3. Describe the focus of the document (using one phrase if possible – e.g., policy processes for nurse exodus/shortage from existing, ineffective health care practices)
4. Summary of key findings or insights from the document (1-2 paragraphs)

5. Document characteristics (check all the apply)
 - i. Year of publication:
 - ii. Years of data collection (if applicable):
 - iii. Methods used/type of paper
 - a. Primary research study
 - Systematic review (needs to have explicit search and selection criteria)
 - Narrative Review
 - Network Meta Analysis
 - Other review
 - b. Non-research (these should only be from Key Informants)
 - Review (not systematic)
 - Theory/discussion/policy or position paper
 - Commentary/editorial
 - Website content (e.g., Choosing Wisely website)
 - c. Publication status
 - Peer-reviewed journal
 - Grey literature
 - iv. Country or region focus
 - a. General/global focus
 - b. Specific
 - Canada
 - UK (NHS)
 - US
 - Australia

6. Frameworks and questions for extracting key findings

Check the dependent and independent variables that the paper addresses and provide a brief summary of the information in the paper as it relates to the data extraction questions associated with it.

Data Point	Extracted information (can be copied, but please use quotes if copied)
Type of Crisis (nurse migration, nurse leaving early, nurse moving within system, nurse shortage)	
Description of the primary crisis and its context <ul style="list-style-type: none"> • Give some background on crisis, any explanations • Background 	
Issues identified as causing shortage or exodus: <ul style="list-style-type: none"> • External event (SARs, Covid-19, policy, change in government, etc.) 	

<p>What issues or considerations are perceived as key drivers for the ongoing crisis?</p> <ul style="list-style-type: none"> • Provide a description of the reasons behind the crisis (there may be multiple) • This may be a list of issues/drivers in a SR (if not context specific) • If specific to UK, Canada, Australia or US, please specify 	
<p>Proposed Recommendations (unimplemented)</p> <ul style="list-style-type: none"> • Likely be many recommendations, please list and provide as much detail as available 	
<p>Implemented Recommendations</p> <ul style="list-style-type: none"> • If paper looks at implementation what policies, strategies, etc. were implemented 	
<p>Implementation</p> <ul style="list-style-type: none"> • Identify enablers to implementations • Contextual factors 	
<p>Implementation</p> <ul style="list-style-type: none"> • Identify barriers to implementation • Contextual factors 	
<p>What issues continue to remain unaddressed?</p> <ul style="list-style-type: none"> • Does article identify unaddressed issues or concerns • Gaps 	
<p>Changes to issues/ solution or perceptions over time</p> <ul style="list-style-type: none"> • If authors describe this, please include 	
<p>How have they been perceived by nurses?</p> <ul style="list-style-type: none"> • Does article speak to nurse perspective? • Please include what strategy the nurse is referring to 	
<p>How have they been perceived by other health care professionals?</p> <ul style="list-style-type: none"> • Similar to above nurse extraction 	
<p>Evaluative outcomes How are they evaluating the recommendation?</p> <ul style="list-style-type: none"> • Quality indicators • Type of evaluation • Increase in nurses? • Decrease in outflow 	
<p>Equity, Diversity, and Inclusion in PHC reform a. How is EDI represented or referred to in the article</p>	
<p>Is gender considered in the recommendations (if so, how?)</p>	

Appendix C: Details of policies recommended by Nursing Organizations in Canada to Address Nursing Shortages (2000-present)

Year	Jurisdiction	Organization	Recommendations
2000	Ontario	Registered Nurses' Association of Ontario (RNAO, 2000)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Incorporate nurse input in public policy development, implementation, and evaluation <input type="checkbox"/> Ensure sustainable and equitable funding for healthcare <input type="checkbox"/> Integrate nursing into decision making processes at all levels of healthcare organizations <p>Positive practice environments</p> <ul style="list-style-type: none"> <input type="checkbox"/> Ensure sustainable and healthy working environments <input type="checkbox"/> Provide specialized support for nurses working in rural and northern communities <input type="checkbox"/> Ensure adequate workloads <p>Recruitment and retention</p> <ul style="list-style-type: none"> <input type="checkbox"/> Attract high school and mature students to nursing programs <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide opportunities for professional development <input type="checkbox"/> Promote access to educational programs and lifelong learning
2001	Ontario	Registered Nurses' Association of Ontario (RNAO, 2001)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Commit to hiring more nurses with clear accountability mechanisms <input type="checkbox"/> Increase the proportion of full-time nurses <input type="checkbox"/> Discourage casual employment of nurses <p>Positive practice environments</p> <ul style="list-style-type: none"> <input type="checkbox"/> Ensure healthy work environments where nurses are valued healthcare professionals <p>Recruitment and retention</p> <ul style="list-style-type: none"> <input type="checkbox"/> Organizations such as RNAO should organize job/career fairs to attract nurses to Ontario <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Continue to develop and expand orientation programs, mentorship initiatives, clinical fellowships and other educational programs for Ontario's nurses
2002	Canada	Canadian Nurses Association RNAO, 2002)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Create and maintain pan-Canadian database on nurses in Canada (education, registration, immigration/emigration, RN examination) <p>Positive practice environments</p> <p>Recruitment and retention</p> <ul style="list-style-type: none"> <input type="checkbox"/> Research to understand barriers and facilitators to nursing retention <p>Leadership</p> <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Create more spaces for nurses in universities <input type="checkbox"/> Target funds to areas/specialties tied to medium and long term population care needs

Year	Jurisdiction	Organization	Recommendations
2002	Canada	<p>Canadian Nursing Advisory Committee</p> <p>(Canadian Nursing Advisory Committee, 2002)</p>	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Increase the number of nurses <input type="checkbox"/> Reduce workload <input type="checkbox"/> Address violence in workplace <input type="checkbox"/> Ensure adequate staffing to provide quality patient care <p>Positive practice environments</p> <ul style="list-style-type: none"> <input type="checkbox"/> Create safe work environment <input type="checkbox"/> Maximize scope of nurse practice <input type="checkbox"/> Improving working conditions <p>Recruitment and retention</p> <ul style="list-style-type: none"> <input type="checkbox"/> Retain older nurses <input type="checkbox"/> Provide incentives for nurses who work in hard to staff areas <p>Leadership</p> <ul style="list-style-type: none"> <input type="checkbox"/> Create succession plans for nurse leaders <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Educate and graduate more nurses <input type="checkbox"/> Educate and train research nurses <input type="checkbox"/> Provide clinical training for nurse trainees <p>Fund opportunities for professional development for nurses</p>
2003	Ontario	<p>Registered Nurses' Association of Ontario</p> <p>(RNAO, 2003)</p>	<p>Macroeconomic and health care funding</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wage equity and stability across settings <p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Improve safety of nurses and introduce whistle blower legislation to ensure nurses can express their concerns without fear <input type="checkbox"/> Recruit 8000 new FTE nursing positions <input type="checkbox"/> Offer more full-time positions. Commit to 70% of nurses being full time <p>Leadership</p> <ul style="list-style-type: none"> <input type="checkbox"/> Increase nursing leadership in government and organizations <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Increase number of RN trained (2004 and 2005) <input type="checkbox"/> Increase number of nurse faculty in university <p>Support clinical placements and provide internships for new nurses</p>
2006	Canada	<p>Canadian Nurses Association</p> <p>(Villeneuve & MacDonald, 2006)</p>	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Work in interdisciplinary teams <input type="checkbox"/> Increase opportunities for full time employment <input type="checkbox"/> Use national application center to track enrollments, admission, attrition, graduation of nurses <p>Positive practice environments</p> <ul style="list-style-type: none"> <input type="checkbox"/> Maximize scope of practice <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Offer more professional and academic nursing degrees <p>Increase clinical placements for new nurses</p>

Year	Jurisdiction	Organization	Recommendations
2007	Ontario	Registered Nurses Association of Ontario (RNAO, 2007)	<p>Macroeconomic and health care funding</p> <ul style="list-style-type: none"> <input type="checkbox"/> Address inconsistent and inadequate funding for nursing <input type="checkbox"/> Commitment to educational funding <p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Improve employment security <input type="checkbox"/> All RN should have access to full time employment <input type="checkbox"/> Address workload, overtime, scheduling, abuse and lack of professional autonomy <p>Positive practice environments</p> <ul style="list-style-type: none"> <input type="checkbox"/> Improve workplace environments <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Commitment to educational funding
2008	Canada	Canadian Federation of Nurse Unions (Maddalena et al., 2008)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> <input type="checkbox"/> Creation of national ‘best practice’ for nursing management, practice and staffing models <input type="checkbox"/> Ensure appropriate workloads, workload management, staffing initiatives <input type="checkbox"/> Reduce workloads <input type="checkbox"/> Allow breaks/vacation <input type="checkbox"/> Reduce mandated overtime <p>Positive practice environments</p> <ul style="list-style-type: none"> <input type="checkbox"/> Processes should be put in place to ensure health organizations are accountable for creating safe and healthy work environments <input type="checkbox"/> Create innovations for health and well-being <input type="checkbox"/> Create “Magnet culture” to empower nurses <input type="checkbox"/> Maximize scope of practice <p>Recruitment and Retention:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Develop retention initiatives for mid to late career nurses <input type="checkbox"/> Establish recruitment targets <input type="checkbox"/> Retain and support novice nurses <input type="checkbox"/> Provide incentives to retain experienced nurses <p>Education and training</p> <ul style="list-style-type: none"> <input type="checkbox"/> Increase capacity of nursing education programs <input type="checkbox"/> Provide appropriate support to allow diverse groups of trainees into the profession

Year	Jurisdiction	Organization	Recommendations
2008	Ontario	Registered Nurses' Association of Ontario (RNAO, 2008b)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ For ethical reasons, health organizations and government should not poach nurses or other health professionals from countries in higher need ☐ Continue to invest in patient safety and quality of care, including enhanced interdisciplinary work and continuity of care/care provider ☐ Increase the proportion of nurses working full-time to at least 70 per cent <p>Positive practice environments</p> <ul style="list-style-type: none"> ☐ Invest in workplace health ☐ Ensure adequate workloads ☐ Offer flexible employment arrangements that meet the needs of nurses ☐ Expand roles for all nurses <p>Recruitment and retention</p> <ul style="list-style-type: none"> ☐ Reduce systematic barriers for internationally educated nurses who wish to practice in Ontario ☐ Guarantee full-time employment for new graduate nurses <p>Leadership</p> <ul style="list-style-type: none"> ☐ Use best practice management models and approaches <p>Education and training</p> <ul style="list-style-type: none"> ☐ Invest in nursing education across the country, including infrastructure and faculty ☐ Invest in additional nursing seats at Canadian educational institutions <p>Provide opportunities for and support nurses in professional development</p>
2008	Ontario	Registered Nurses' Association of Ontario (RNAO, 2008a)	<p>Macroeconomic and health care funding</p> <ul style="list-style-type: none"> ☐ Wage parity across settings <p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ Increase workforce by 9000FTE positions ☐ Offer more full-time positions. Commit to 70% of nurses being full time ☐ Guarantee full time employment to new graduates who wish full time employment ☐ Provide protected time for experienced nurses to mentor new nurses ☐ Increase opportunities for NP <p>Recruitment and retention</p> <ul style="list-style-type: none"> ☐ Recruit international nurses ethically
2009	Canada	Canadian Nurses Association (Canadian Nurses Association, 2009)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ Reduce absenteeism <p>Positive practice environments</p> <ul style="list-style-type: none"> ☐ Maximize scope of practice ☐ Make efforts on strategies to improve health and well-being of RN's <p>Recruitment and retention</p> <ul style="list-style-type: none"> ☐ Reduce exit rates for all RNs ☐ Reduce attrition in entry to practice programs ☐ Reduce international in-migration <p>Education and training</p> <ul style="list-style-type: none"> ☐ Increase enrolment in RN educational programs

Year	Jurisdiction	Organization	Recommendations
2009	Canada	Canadian Nurses' Association (Neufeld & Canadian Nurses Association, 2009)	Workforce policy and planning <ul style="list-style-type: none"> ☐ Reduce absenteeism ☐ Reduce time on non-nursing duties ☐ Adopt innovative solutions ☐ Implement national occupational health and safety strategy Positive practice environments <ul style="list-style-type: none"> ☐ Maximize scope of practice
2009	Ontario	Registered Nurses' Association of Ontario (RNAO, 2009)	Macroeconomic and healthcare funding <ul style="list-style-type: none"> ☐ Ensure equitable remuneration and working conditions for RNs working across different health care settings Workforce policy and planning <ul style="list-style-type: none"> ☐ Hire an additional 9000 nursing positions by 2011 (including 3000 FTE) ☐ Increase proportion of full-time RNs to 70% of RNs ☐ Do not engage in international recruitment of nurses from countries in higher need Recruitment and retention <ul style="list-style-type: none"> ☐ Guarantee full-time employment to all nursing graduates in Ontario ☐ Offer late career nurses the 80/20 program, which allows them to spend 80% of their work time in direct patient care, and the other 20% in mentorship or other professional development opportunities. Education and training <ul style="list-style-type: none"> ☐ Increase mentorship by late career nurses ☐ Establish permanent funding for existing upgrading and bridging programs for internationally educated nurses who wish to practice in Ontario
2011	Canada	Canadian Federation of Nurse Unions (Canadian Federation of Nurses Unions, 2011)	Workforce policy and planning <ul style="list-style-type: none"> ☐ Reduce overtime, turnover, injury and absenteeism through staffing policies
2012	Saskatchewan	Saskatchewan Union of Nurses (Saskatchewan Union of Nurses, 2012)	Macro-economic and health care funding <ul style="list-style-type: none"> ☐ A 2% lump sum payment in lieu of a wage increase in the first year, followed by a 2% economic wage increase in year two
2013	British Columbia	British Columbia Nurses Union (BC Nurses' Union, 2013)	Recruitment and retention <ul style="list-style-type: none"> ☐ The College of Registered Nurses of BC's (CRNBC) has removed the requirement for 250 hours of supervised practice when an Internationally Educated Nurse (IEN) has passed the national exam and is waiting to begin work in BC
2015	British Columbia	British Columbia Nurses Union (BC Nurses' Union, 2015)	Recruitment and retention <ul style="list-style-type: none"> ☐ OR nurses at Vancouver Coastal Health Authority site will receive a \$5.00 per hour premium which replaces current OR RN and monthly premiums until there is a stable complement of OR nurses

Year	Jurisdiction	Organization	Recommendations
2015	Ontario	Registered Nurses' Association of Ontario (RNAO, 2015)	<p>Macroeconomic and healthcare funding</p> <ul style="list-style-type: none"> □ Address compensation and benefits inequities across different healthcare settings <p>Workforce policy and planning</p> <ul style="list-style-type: none"> □ Relieve short-term staffing gaps through organizational partnerships <p>Positive practice environments</p> <ul style="list-style-type: none"> □ Develop pathways that support an expanded utilization role of nurses in rural settings (i.e., RN prescribing) <p>Recruitment and retention</p> <ul style="list-style-type: none"> □ Highlight the benefits of practicing nursing in rural and remote communities while also being transparent about the realities of these working conditions □ Maintain existing government recruitment and retention initiatives and expand their eligibility to include all healthcare settings □ Invest in development of rural and remote infrastructure, such as telecommunications, hydro, transportation, housing, etc. <p>Education and training</p> <ul style="list-style-type: none"> □ Expand and create programs that enable rural and remote residents to access practical nursing, baccalaureate, and graduate nursing education within their communities □ Support First Nations, Inuit and Métis individuals to pursue nursing education □ Incorporate socio-cultural context of First Nations, Inuit, and Métis people in entry-level nursing education programs in Ontario □ Expand and create initiatives to support Francophone persons to pursue nursing education □ Support and coordinate travel and accommodation for rural and remote nursing students □ Provide extended orientation to new nurses practicing in rural and remote communities □ With rural and remote communities, codesign and implement continuing education programs about rural and remote nursing □ Create a rural nursing education initiative to provide financial support for tuition and other costs associated with pursuing education
2016	British Columbia	British Columbia Nurses Union (BC Nurses' Union, 2016)	<p>Workforce planning and policy:</p> <p>Hire a Nurse campaign, which is designed to assist in recruiting up to 1643 additional RNs and RPNs to positions across six health authorities and Providence Health Care</p>
2017	British Columbia	British Columbia Nurses Union (BC Nurses' Union, 2017)	<p>Education and training</p> <ul style="list-style-type: none"> □ Increase BC's education capacity of full-time specialty-educated positions across the province, which includes operating room nurses

Year	Jurisdiction	Organization	Recommendations
2017	Nunavut	Auditor General of Canada (Auditor General of Canada, 2017)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> □ This report highlighted that there is a lack of practices and systems in place to record information about nurse vacancies and related staffing needs, which hinders the hiring processes; the Department of Health agreed and will implement these with follow-up assessments <p>Positive practice environments</p> <ul style="list-style-type: none"> □ Report found that safety risks were not adequately managed for nurses working in community health centres <p>Recruitment and retention</p> <ul style="list-style-type: none"> □ High cost of living and travel as well as limits on job opportunities family for partners/spouses presents and feelings of isolation due to being far from a challenge when it comes to retention and recruitment in Nunavut <p>Education and training</p> <ul style="list-style-type: none"> □ Report found gaps in training and support for nurses and health professionals in community health centres. Training was also inconsistent, and the department did not have annual base funding dedicated for orientation and training □ Clinical nurse educators were not found to be organized to support coordination of orientation and training to nurses adequately □ Tracking of orientation and training is also an important recommendation □ Specific training is recommended for individuals working in isolated communities
2018	Ontario	Registered Nurses' Association of Ontario (RNAO, 2016, 2018)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> □ Hire more RNs in hospitals (10,000 vacancies to fill) <p>Recruitment and retention</p> <ul style="list-style-type: none"> □ Ensure all new hires in acute care and cancer care hospitals are RNs
2018	Prince Edward Island	Prince Edward Island Nurses Union (Prince Edward Island Nurses' Union, 2018a)	<p>Macroeconomic and health care funding</p> <ul style="list-style-type: none"> □ Increasing nursing seats at University of PEI <p>Positive practice environments</p> <ul style="list-style-type: none"> □ Work towards reducing double duty, denial of vacation and absences to maintain work-life balance and high morale
2018	Prince Edward Island	Prince Edward Island Nurses Union (Prince Edward Island Nurses' Union, 2018b)	<p>Workforce planning and policy</p> <ul style="list-style-type: none"> □ Adequate and timely responses to nursing shortages are required to prevent the problem from being exacerbated. <p>Recruitment and Retention</p> <ul style="list-style-type: none"> □ Significant number of nurses should be hired

Year	Jurisdiction	Organization	Recommendations
2019	Canada	Canadian Federation of Nurse Unions (Canadian Federation of Nurses Unions, 2019)	Recruitment and retention <ul style="list-style-type: none"> Ethical recruitment of international nurses to address shortages. Considerations should include appropriate accommodations, relocation allowances, sensitivity to cultural issues, reducing barriers to union membership
2019	Alberta	United Nurses of Alberta (United Nurses of Alberta, 2019)	Workforce policy and planning <ul style="list-style-type: none"> Registered Nurse relief positions for use exclusively in the Emergency Department
2019	New Brunswick	Government of New Brunswick (Government of New Brunswick, 2019)	Workforce policy and planning <ul style="list-style-type: none"> In December 2017, a Nursing Resource Strategy Steering Committee was developed in New Brunswick to create a 10-year strategy to address the nursing shortage, which was then finalized with four pillars in April 2018 (detailed below) Positive practice environments <ul style="list-style-type: none"> Enhancing RN work-life balance and employment is one of the four pillars of the Nursing Resource Strategy Steering Committee Recruitment and retention <ul style="list-style-type: none"> Recruiting nurses internationally is one of the four pillars of the Nursing Resource Strategy Steering Committee Part of promoting the RN occupation in NB involves the development of promotional materials to recruit students to NB universities and RNs to the NB workforce, and examining career planning programs in schools to promote nursing professions Education and training <ul style="list-style-type: none"> Enhancing nursing education and training in NB is one of the four pillars of the Nursing Resource Strategy Steering Committee Processes to offer permanent employment to nurses from outside of NB or Canada will be developed to address shortages Financial incentives, support for leave, etc.
2019	Nova Scotia	National Union of Public and General Employees (National Union of Public and General Employees, 2019)	Recruitment and Retention <ul style="list-style-type: none"> Recruit more full-time nurses Ensure compensation is appropriately provided for overtime hours

Year	Jurisdiction	Organization	Recommendations
2020	Ontario	Registered Nurses' Association of Ontario (Ontario Ministry of Long Term Care Staffing Advisory Group, 2020)	<p>Macroeconomic and healthcare funding</p> <ul style="list-style-type: none"> ☐ Wage and benefit parity across settings and care continuum <p>Positive practice environments</p> <ul style="list-style-type: none"> ☐ Improve culture of LTC nursing ☐ Promote safe environment <p>Recruitment and retention</p> <ul style="list-style-type: none"> ☐ Continued use of centralized portal for recruitment <p>Leadership</p> <ul style="list-style-type: none"> ☐ Implement effective leadership <p>Education and training</p> <ul style="list-style-type: none"> ☐ Onsite training and preceptorships ☐ Offer continuing education
2021	Canada	Canadian Federation of Nurses Unions (Canadian Federation of Nurses Unions, 2021)	<p>Macroeconomic and health care funding</p> <ul style="list-style-type: none"> ☐ Provide federal funding to hire more nurses, and recruit and retain nurses <p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ Implement a national moratorium on reducing nursing hours <p>Positive practice environments</p> <ul style="list-style-type: none"> ☐ Create federal worker safety agency to make decisions on guidelines, policies and strategies to keep health workers safe ☐ Legislate stiffer penalties for violence against health care workers <p>Leadership</p> <ul style="list-style-type: none"> ☐ Create a federal health workforce agency to guide hiring appropriate and sufficient health care workers ☐ Reinstate a federal chief nursing officer
2021	British Columbia	BC Nurses' Union (BC Nurses' Union, 2020)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ Hire additional nurses <p>Recruitment and retention</p> <ul style="list-style-type: none"> ☐ Recruit nurses <p>Education and training</p> <ul style="list-style-type: none"> ☐ Educate thousands of nurses to meet growing demands of BC's health care system
2021	Alberta	United Nurses of Alberta (United Nurses of Alberta, 2021)	<p>Macroeconomic and health care funding</p> <ul style="list-style-type: none"> ☐ Funding (federal) to hire and retain nurses <p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ Funding (federal) to hire additional nurses and health care workers <p>Recruitment and retention</p> <ul style="list-style-type: none"> ☐ Funding (federal) directed to retention and recruitment initiatives
2021	Saskatchewan	Saskatchewan Union of Nurses (Powers, 2021)	<p>Positive practice environment</p> <ul style="list-style-type: none"> ☐ Staff shortages and burnouts are noted and Union would like to work with the provincial government to identify solutions
2021	Manitoba	Manitoba Nurses Union (Manitoba Nurses Union, 2021a)	<p>Workforce policy and planning</p> <ul style="list-style-type: none"> ☐ Hire additional nurses within the public system <p>Education and training</p> <ul style="list-style-type: none"> ☐ Train more nurses

Year	Jurisdiction	Organization	Recommendations
2021	Manitoba	Manitoba Nurses Union (Manitoba Nurses' Union, 2021b)	Recruitment and retention <ul style="list-style-type: none"> □ Create a central rapid intake system to facilitate recruitment □ Incentivize recruitment and retention. Macroeconomic and healthcare funding <ul style="list-style-type: none"> □ Provide wage top ups for all nurses
2021	Ontario	Canadian Nurses Association (Canadian Nurses Association, 2021a)	Education and training <ul style="list-style-type: none"> □ Invest \$25 million to provide direct mental health supports for health care workers delivery direct services during and beyond pandemic □ Invest \$100 million to develop and implement a new health human resources strategy <ul style="list-style-type: none"> o Improve supports available that transition new nurses to practice o Targeted efforts for specific sections (e.g. long term care) o Support career laddering o Create mechanisms to for internships □ Invest \$200 million to close compensation gaps across settings and recruit, support and retain right mix of health care professionals
2021	Ontario	Registered Nurses Association of Ontario (RNAO, 2021d)	Macroeconomic and healthcare funding <ul style="list-style-type: none"> □ Increase NP supply 50% by 2030 Workforce policy and planning <ul style="list-style-type: none"> □ Increase support for nurses <ul style="list-style-type: none"> o Reduce workload o Limit overtime o Increase mentoring opportunities o Increase accessibility to mental health supports o Increase availability of childcare □ Increase staffing levels <ul style="list-style-type: none"> o Ontario is below average for number of RN, NP/100000 population (in 2018 it was ~ 700 vs ~825 elsewhere) Nursing leadership <ul style="list-style-type: none"> □ Succession planning for management, senior management and faculty Education and training <ul style="list-style-type: none"> □ Increase RN admissions by 10% per year over 4 years
2021	Ontario	Registered Nurses' Association of Ontario (RNAO, 2021b)	Education and training <ul style="list-style-type: none"> □ Increase in BScN enrollments and NP enrollments
2021	Ontario	Registered Nurses Association of Ontario (RNAO, 2021c)	Macroeconomic and healthcare funding Recruitment and retention <ul style="list-style-type: none"> □ Recommend federal government <ul style="list-style-type: none"> o commit to hire thousands of additional RN and NP o implement measures to retain nurses o efforts to recruit future nurses

Year	Jurisdiction	Organization	Recommendations
2021	Quebec	Ordre des infirmières et infirmiers du Québec (OIIQ) (Mathieu, 2021)	Positive practice environments <ul style="list-style-type: none"> ☐ Improve the conditions for practicing the profession ☐ Offer clinical support to nurses and trainees
2021	Quebec	Ordre des infirmières et infirmiers du Québec (OIIQ) (Ordre des infirmières et infirmiers du Québec, n.d.-b)	Workplace policy and planning <ul style="list-style-type: none"> ☐ Plan nurses' schedules so that OSI becomes an exceptional measure again and the weekly workload is sustainable and healthy <ul style="list-style-type: none"> Recruitment and retention ☐ Prioritize recruitment of permanent and full-time staff and reduce the use of employment agencies <ul style="list-style-type: none"> Leadership ☐ Ensure a nursing presence in management committees to relay field needs to managers
2021	Quebec	Ordre des infirmières et infirmiers du Québec (OIIQ) (Ordre des infirmières et infirmiers du Québec, n.d.-a)	Macroeconomic and health care funding <ul style="list-style-type: none"> ☐ Develop and implement a national mechanism for the allocation of nursing resources with regard to nurses as well as clinical nurse specialist
2021	Quebec	Ordre des infirmières et infirmiers du Québec (OIIQ) (Ordre des infirmières et infirmiers du Québec, 2021)	Education and training <ul style="list-style-type: none"> ☐ Increase learning opportunities in health care settings (e.g. paid internships or residencies)
	New Brunswick	New Brunswick Nurses Union (New Brunswick Nurses Union, 2021)	Workplace policy and planning <ul style="list-style-type: none"> ☐ Create plans to ensure nurses are not overworked and can take vacations and breaks Positive practice environments <ul style="list-style-type: none"> ☐ Create safe working conditions
	Newfoundland	Registered Nurses' Union Newfoundland and Labrador (Registered Nurses' Union Newfoundland and Labrador, 2021b)	Macroeconomics and health care funding <ul style="list-style-type: none"> ☐ Investments to address staff shortages Workplace policy and planning <ul style="list-style-type: none"> ☐ Create plans to reduce workload ☐ Unsafe environments a result of wage suppression, roll backs, increases in overtime, forced overtime, no time off, denial of fair contracts Positive practice environment <ul style="list-style-type: none"> ☐ Create safer work environments

Appendix D: Example of Government-Led Initiatives in the Literature

Reference	Selected Implemented Programs
Australia	
(Raffaele, 2014)	<p><i>Recruitment & Retention</i></p> <p>A dedicated government recruiting website was established for interested parties to submit an expression of interest and search and apply for positions. The expressions of interest were then matched to vacancies according to skills and preferences stated.</p>
(Australian Government, 2014)	<p><i>Education and Clinical Practice Application</i></p> <p>Clinical Training Funding (CTF) program</p> <p>Allocated \$425 million, from 2011 through 2013, to grow clinical placement activity and expand clinical training infrastructure.</p> <p><i>Recruitment & Retention</i></p> <p>Rural Health Professionals Program</p> <p>Provides support services to attract and retain nurses and allied health professionals to work in rural communities in rural Australia. Since the program's launch (2012), 130 nurses have started working in rural Australia.</p>
(Chenoweth et. al., 2010)	<p><i>Education & Clinical Practice Application</i></p> <p>Central Sydney Area Mental Health Service</p> <p>Participants provided with course handbook, theory/education classes, 3-month clinical placements with rotating specialities, clinical facilitation, and unit-based mentors.</p> <p>Program satisfaction and recruitment success were highest for clinical supervision and facilitation (96%), followed by the induction package (92%), the course handbook (87%) and orientation.</p>
Canada	
(Park & Yu, 2019)	<p><i>Recruitment & Retention</i></p> <p>Nursing Graduate Guarantee</p> <p>The Nursing Graduate Guarantee (system of financial incentives for employers offered through salary provisions in the first six months of new RN temporary full-time positions) improved full-time employment rate and greater retention of nurses</p>
United Kingdom	
(Borneo et al, 2017)	<p><i>Workforce Policy and Planning</i></p> <p>In 2015 UK-wide guidelines issued by the Faculty of Intensive Care Medicine, which generally suggest a minimum overall nurse-to-patient ratio of 1:2 for HDU patients and 1:1 for ICU on all shifts.</p> <p>□ An average of 1.5 patients per registered nurse. 27% of ICU/HDU respondents reported more than two patients to one registered nurse.</p>
United States	
(Goodin et al., 2003; Janiszewski, 2003)	<p><i>Recruitment & Retention</i></p> <p>Nurse Reinvestment Act (2002)</p> <p>Focuses on nurse recruitment and retention through the establishment of educational scholarships, retention grants, elder care training grants, supportive career ladder partnerships between nursing schools and practice settings, loan cancellation for nursing teachers, and public service announcements that promote the nursing profession.</p>

(McDonald et. al., 2012) *Positive Practice Environments and Organizational Performance*

The Magnet Model

Nurses reported feeling appreciated and had increased self-efficacy in their professional role, and organizational commitment was perceived as high.

- Other researchers have reported similar findings, with perceptions of increased partnership, coaching, collaboration, communication, and a sense of belonging all resulting in increased satisfaction and retention.

Education and Clinical Practice Application

The “Shadow-a-Nurse” Program

An internship program developed to rapidly move new nurses into a complex role previously reserved for experienced nurses.

- 6 weeks in length
- Mentees completed pretest and post-test evaluations
- Participation in an “externship program” resulted in higher professionalism, role socialization, cultural understanding, and a 3% increase in retention.

Appendix E: Actions and policies implemented by Governments in Canada (federal, provincial, territorial) to address nursing shortages (2000-present)

Year	Jurisdiction	Policy/Action/Recommendation	Details
1999-2000	Ontario (Ontario Ministry of Health and Long-Term Care, 2001)	Workforce policy and planning	<ul style="list-style-type: none"> □ The MOHLTC is providing \$1 M annually for five years beginning in fiscal 99/00 to the Nursing Effectiveness, Utilization and Outcomes Research Unit (NRU) for nursing human resources research and the development of nursing databases
1999-2001	Ontario (Ontario Ministry of Health and Long Term Care, 2001)	Recruitment and retention Education and training	<ul style="list-style-type: none"> □ The MOHLTC announced \$10 M in annual funding for Nursing Education, and Recruitment and Retention Initiatives which includes the Nursing Education Initiative, Best Practice Guidelines, Advanced Nursing Clinical Fellowships, and Retention and Recruitment
1999-2001	Ontario (Ontario Ministry of Health and Long Term Care, 2001)	Leadership	<ul style="list-style-type: none"> □ The MOHLTC asked hospitals, CCACs and LTC facilities to identify nursing leadership positions, implement strategies to encourage leadership and participation in decision-making, and to indicate these positions/roles and nursing leadership strategies in their Nursing Plans or Agreements □ The creation of the first Provincial Chief Nursing Officer (PCNO) in Ontario in December 1999 to role model nursing leadership for health organizations throughout the health system □ The launching in partnership with Registered Nurses' of Ontario (RNAO) of the Best Practice Guidelines Program, in 1998. □ Developed and offering leadership workshops for advance practice nurses and middle managers, chief nursing officers, and staff nurses □ Funding for the Nursing Effectiveness, Utilization and Outcomes Research Unit (NRU) to establish the Dorothy Wylie Leadership Institute for Ontario nurses in August 2001 □ Launching in partnership with Registered Nurses' of Ontario (RNAO) of the Best Practice Guidelines Program, in 1998.
1999-2001	Northwest Territories (Government of Northwest Territories, 2000)	Recruitment and retention	<ul style="list-style-type: none"> □ A Temporary Market Supplement for Nurses (TMSN) to assist in the recruitment and retention of practicing registered nurses in the NWT; provides \$3,000 to a newly hired indeterminate nurse and a retention component provides amounts ranging between \$3,000 and \$5,000, depending on years of service □ The Department of Health and Social Services established an aggressive nurse recruitment program in 1999

Year	Jurisdiction	Policy/Action/Recommendation	Details
2000-2001	Ontario (Ontario Ministry of Health and Long Term Care, 2001)	Macro-economic and health care funding	<ul style="list-style-type: none"> □ The government invested \$399.5 million in new base funding in 00/01 for new nursing positions which includes the Nursing Enhancement Fund (NEF) □ The Nursing Enhancement Fund (NEF) is a direct response to provide an immediate investment in permanent, sustainable front-line positions, targeted specifically for the creation of new, permanent full-time and part-time nursing positions □ The Nursing and Health Outcomes project was created to identify the impact of nursing services on health outcomes across the health system; identify data elements and indicators for nursing services and health outcomes in all sectors; and to inform a funding approach for nursing services identified as contributing to good health outcomes
2000-2001	Ontario (Ontario Ministry of Health and Long Term Care, 2001)	Education and training	<ul style="list-style-type: none"> □ Funding was announced in April 2000 to enable the start-up and expansion of the collaborative university-college BScN programs, and included transitional grants and operating grants
2004	Nova Scotia (Nova Scotia Department of Health, 2004)	Education and training	<ul style="list-style-type: none"> □ \$7.1 million for nurse training and expanding nursing seats □ \$200,000 in nursing grants for projects focused on nursing practice, work-life quality and innovation.
2005	Ontario RNAO, 2005)	Recruitment and retention	<ul style="list-style-type: none"> □ \$50 million to increase number of FT positions in hospitals □ \$191 million in increase care in the LTC sector including \$45 million to create nursing positions in sector □ \$103 million to increase home care, including money to support full time nurse positions in sector
2005-2006	PEI (Prince Edward Island Department of Health, 2005)	Recruitment and retention	<ul style="list-style-type: none"> □ "Bachelor of Nursing sponsorship program" covers third and fourth year finances for those who agree to work in PEI after graduation.
2005-2008	Northwest territories (Government of Northwest Territories, 2005)	Recruitment and Retention Education and training	<ul style="list-style-type: none"> □ "Graduate placement program" aimed to retain nursing graduates after completion of their studies □ "Community Health Nurse Development Program" trains nurses to work in community settings

Year	Jurisdiction	Policy/Action/Recommendation	Details
2007	Nova Scotia (CBC News., 2007)	Education and training	<ul style="list-style-type: none"> □ “New Skills for Nurses” project to train nurses in critical care and emergency department
2007	Alberta (Government of Alberta, 2007)	Recruitment and retention Education and training	<ul style="list-style-type: none"> □ \$3.8 million to facilitate assessment of international nurses □ \$750,000 given to nurses enrolled in a nursing refresher program □ \$3.2 million to create space for more nursing graduates from universities
2009	Canada (Government of Canada, 2009)	Recruitment and retention	<ul style="list-style-type: none"> □ Support is being provided to <i>Research to Action: Applied Workplace Solutions for Nurses</i>, a new initiative being undertaken by the Canadian Federation of Nurses Unions to improve recruitment and retention strategies through projects in nine provinces across Canada □ More than \$4 million in funding is being provided by Health Canada through the Pan-Canadian Health Human Resources Strategy which supports projects that help ensure an adequate supply of health care providers while promoting optimal working conditions for these individuals
2009	British Columbia (Government of British Columbia, 2009)	Education and training	<ul style="list-style-type: none"> □ The provincial government has funded 4014 new spaces since 2001, doubling the number of seats available in nursing programs across the province – this includes an additional 245 spaces added under Budget 2009, with further expansion expected □ In addition, 24 nursing programs have been created since 2001 □ The Province is now funding 57 nursing programs in B.C.’s public post-secondary institutions, including 16 four-year bachelor of science in nursing degree programs, and two accelerated BSN programs that can be completed in three years
2015	Nova Scotia (Government of Nova Scotia, 2016)	Recruitment and retention	<ul style="list-style-type: none"> □ Invested close to \$4.7 million to help the Nova Scotia Health Authority, IWK Health Centre, and continuing care employers recruit and retain nurses through nursing orientation, new graduate support, professional development, mentorship, innovative nurse-led workplace improvement projects, and co-operative student work placements □ Provided over \$200,000 to the Internationally Educated Nurse Assessment and Bridging Program to support new immigrant nurses on the pathway to licensure in Nova Scotia

Year	Jurisdiction	Policy/Action/Recommendation	Details
2015	Nova Scotia (Government of Nova Scotia, 2016)	Workforce policy and planning Education and training	<ul style="list-style-type: none"> □ In September 2016, the province announced it will give Nova Scotia Health Authority an extra \$3.6 million to hire twenty-two new nursing professionals (a mix of nurse practitioners and family practice nurses) □ Funding for a rural mentorship program that enabled 13 nurses from rural and urban areas to switch locations for two shifts □ Invested \$1.4 million to support workplace orientation for the large numbers of new graduates entering the workforce □ Introduced a \$250,000 Innovation Fund to help nurses who had innovative ideas to improve their workplaces and recruit into difficult-to-fill positions
2015	Nova Scotia (Government of Nova Scotia, 2016)	Education and training	<ul style="list-style-type: none"> □ Starting in September 2016, Cape Breton University, Dalhousie University and St. Francis Xavier University began implementing modified nursing curricula that are more similar in structure and content and reflect new and emerging teaching methods □ Funding up to \$20,000 to support St. Francis Xavier University and Cape Breton University to develop bridging courses for LPNs who want to work toward a Bachelor of Science in Nursing degree □ Invested \$1.2 million this year to support professional development for nurses in targeted areas like injury prevention, clinical leadership, team development, and improving practice environments □ Spent \$1.2 million on 176 co-operative work placements for 3rd year RN students to increase the likelihood that new graduates will remain in Nova Scotia, especially in areas of greatest health human resource need like long term care and mental health and addictions, and in rural settings
2015	Nova Scotia (Government of Nova Scotia, 2016)	Positive practice environments	<ul style="list-style-type: none"> □ Changed the regulations under the Hospitals Act to enable nurse practitioners to discharge patients from hospitals, and enable RNs to assess, treat and release some patients in emergency rooms and collaborative emergency centres
COVID Policies	Ontario (Government of Ontario, 2016)	Access to Health Services	Changed the regulations under the Hospitals Act to enable nurse practitioners to admit, treat, transfer and discharge patients from emergency departments to in-patient units and from one in-patient units to another

Year	Jurisdiction	Policy/Action/Recommendation	Details
2020	Ontario (Government of Ontario, 2016)	Attending Nurse Practitioners in Long-Term Care Homes	Program Overview and Role Description, Ministry of Health and Long-Term Care. October 2016
	PEI (Graham et al., 2021)	Recruitment and retention	<ul style="list-style-type: none"> □ Health PEI offers financial incentive which increased in December 2019, along with a mentorship program for nurses above and beyond usual orientation □ There is also an RN bridging program which can assist nurses who haven't been practicing to re-enter the workforce; the program helps bring in nurses with credentials recognized in other countries □ On top of regular recruitment, Health PEI also hired 78 nursing students (in response due to COVID-19)
2021	Alberta (Lachacz, 2021)	Workforce policy and planning	<ul style="list-style-type: none"> □ AHS informed nurses' union they will "immediately" begin filling staffing shortages by hiring contract nurses from three agencies across Canada (Toronto-based Greenstaff Medical Canada, Northern Nursing Solutions from Airdrie, Alta., and Vancouver's Brylu Staffing)
2021	Alberta (Rusnell, 2021)	Workforce policy and planning	<ul style="list-style-type: none"> □ Alberta's nurses may soon be forced to work mandatory overtime and cancel holidays □ AHS notified the United Nurses of Alberta in an email on August 20 that it was invoking a clause in their collective agreement that allows AHS, in an unforeseen emergency, to impose longer workdays and direct nurses to other hospitals to address staffing gaps
2021	Manitoba (MacLean, 2021)	Recruitment and Retention	<p>The province announced the internationally educated nurses (IEN) in Manitoba Project on July 8 and opened an online form</p> <p>The initiative will provide up to \$23,000 per approved IEN to help cover a variety of costs that come with obtaining licensure in the province (includes funding for clinical competence assessments and bridge training, as well as other related expenses such as living allowance, transportation and child care)</p> <p>The province will work with the six post-secondary institutions in Manitoba that offer nursing education to work out how to increase their seat capacity "in a sustainable way,"</p> <p>The plan calls for post-secondary institutions in Manitoba to increase the number of nursing education seats from more than 800 currently to around 1,200, over the next few years</p>

Year	Jurisdiction	Policy/Action/Recommendation	Details
2021	Ontario (Payne, 2021)	Recruitment and retention	<ul style="list-style-type: none"> □ As hospitals move beyond the most critical stages of the pandemic and begin to catch up on thousands of missed surgeries, a tweet from Queensway Carleton Hospital this week offered a sign of the times (\$10,000 signing bonus for at least 12 months of commitment) □ The bonuses, being offered by The Ottawa hospital and others as well, are mainly aimed at nurses who are retired, unemployed or working in another province <p>The temporary program was available to nearly 50 Ontario hospitals where the provincial government funded extra critical-care beds for the treatment of COVID-19, according to Ontario Ministry of Health spokesman Bill Campbell</p>
2021	Ontario (Seniors and Accessibility, 2021)	Recruitment and retention	<ul style="list-style-type: none"> □ The Ontario government is investing more than \$2M over two years to provide new and recently hired personal support workers (PSWs) and nurses with financial incentives to encourage them to work in retirement homes <p>The new Recruitment and Retention Incentive Program will be delivered by the Registered Practical Nurses Association of Ontario (WeRPN), and will help recruit and retain skilled PSWs and nurses while building on Ontario’s plan to modernize the provincial retirement homes sector</p> <ul style="list-style-type: none"> □ Nurses will receive \$10,000 for a one-year commitment to work in a retirement home
2021	Quebec (Miekus, 2021)	Recruitment and retention	<ul style="list-style-type: none"> □ The Quebec health network is seeking to fill its current shortage of nurses by recruiting abroad □ Recruitment sessions will be held in France and Belgium over the next few months to “attract at least 1,700 nurses and more than 200 orderlies to Quebec” <p>Nurses who wish to settle in the French-speaking province of Quebec can also apply to immigrate under the Quebec Skilled Worker Program (QWP); successful candidates under this program are also granted permanent residence in Canada</p>
2021	Quebec (Kassam, 2021)	Workforce policy and planning	<ul style="list-style-type: none"> □ The ministry told CTV News that it has most recently been asking doctors to do some nursing work □ Asked the network to be flexible: some physicians can expand their duties to include nursing duties

Year	Jurisdiction	Policy/Action/Recommendation	Details
2021	Quebec (Ross, 2021)	Recruitment and retention Education and training	<ul style="list-style-type: none"> □ The health and education ministries jointly announced "a voluntary program with scholarships to encourage nurses enrolled in [bachelor's programs] to come and lend a hand to the health network" □ It will be rewarded with a lump sum payment when students go back to school: up to \$13,500 for full-time nursing students or \$6,750 for part-time students □ The province also suggested that the participating students would avoid paying tuition for the semester □ The students would "slow down their studies and suspend their internships" from Jan. 17 to May 8 □ They'd commit to work full-time in a public or private health institution during that time □ Up to 2,000 people will be accepted, with each school getting a certain number of the scholarships based on its student body size □ The program will be funded with \$35 million, \$27 million of which is going towards the scholarships -- the rest will be used to cover the "loss of income" for the universities in unpaid tuition fees
2021	New Brunswick (Province of Manitoba, n.d.)	Recruitment and retention	<ul style="list-style-type: none"> □ Department of Health initiatives include an international educated nurses' pilot project, in which 70 nurses from outside the country will be part of a bridging program that will enable them to become registered nurses in the province
2021	Nova Scotia (Health and Wellness, 2021)	Education and training	<ul style="list-style-type: none"> □ The government announced on July 2, the permanent addition of 62 first-year Bachelor of Science, Nursing (BScN) seats at Cape Breton University (CBU), and 8 seats at Dalhousie University's Yarmouth campus □ The provincial government will invest \$3.2 million annually in the new seats in Cape Breton and Yarmouth, which includes funding for the university to continue to improve recruitment and retention efforts for students from under-represented groups to the BScN program or other science programs
2021	Nunavut (Neary, 2021)	Recruitment and retention	<ul style="list-style-type: none"> □ Lucrative bonuses offered to lure agency nurses to Nunavut □ A Department of Health spokesperson confirmed that bonuses were being offered in association with a minimum six-week contract during the summer months □ This bonus is funded through Bayshore Healthcare Agency and not the Government of Nunavut

Year	Jurisdiction	Policy/Action/Recommendation	Details
2021-2022	British Columbia	Macroeconomic and health care funding	<ul style="list-style-type: none"> □ Priorities of provincial budget are aimed at pandemic support for the immediate term and economic recovery for the longer term □ An additional \$2.6 billion in base budget funding for health care for 2021-2022 □ Health Authorities will see an increase of \$1.3 billion from 2020-2021 to 2021-2022 – an increase of 8% □ \$253 million over three years to expand primary and urgent care to increase access to doctors and nurse practitioners □ \$585 million over three years for the Health Career Access Program that will recruit, train, and employ up to 3,000 new care aides in long-term care and assisted living □ \$96 million in new funding over three years to support expansion of post-secondary training capacity for health science professionals and nurses
	(Health Sciences Association of British Columbia, 2021)	Education and training	
2021-2022	Ontario	Recruitment and retention	<ul style="list-style-type: none"> □ \$35 million investment by Ontario government in nursing education programs (publicly assisted colleges and universities) to increase enrollment □ New spots will be available for Fall 2021 and Winter 2022 cohorts □ Will introduce approximately 1,130 new practical nurses and 870 registered nurses into the health care system □ This investment will also support the expansion of clinical education placements for nursing students and personal support worker students in the long-term care sector
	(Ontario Newsroom, 2021)	Education and training	

Appendix F: Nurse Interview Questionnaire

Interview Questions:

1. Have you experienced a large out-migration or movement within your organization (one service area to another) of Nurses?
2. If so, what are some of the reasons that contributed to this?
 - a. Are there key time periods in which this has been particularly prevalent?
 - i. If so, please describe
 - b. What are some reasons that can be attributed to these identifiable time periods of migration or movement? Example: what we are witnessing post pandemic
3. What are the levers and/or policy or system-level decisions that may be considered primary reasons for the ongoing challenges in migration / shortage?
4. What are the levers and / or policy or system-level decisions during the pandemic that have contributed or could contribute to the migration?
5. Do you know of any policies or strategies that were implemented in your organization or in other contexts in Canada in support of recruitment of nurses during the pandemic that had a positive impact on the nursing workforce and can help inform future policies or strategies?
6. What areas of consideration have not received as much attention and need to be understood more around the migration of nurses and nursing shortage?
7. Do you have specific articles that need to be included on this topic (media articles, grey literature)?
8. Any other considerations that need to be highlighted?

Appendix G: Data Extraction Guide

Date:	Participant type:	Lead interviewer (s): Scribe:	
Question/topic	Bullet points: themes from responses from participants	Major concerns or considerations related to question / topic	Supportive or positives related to the question or topic
Experience of nurse migration or movement	Description:		
	Reasons for this occurrence:		
	Key time periods when migration was prevalent & description: Response to prompt: post-pandemic observations:		
Reasons for ongoing migration/shortage	Specific levers:		
	Policies:		
	System-level decisions:		
Reasons for migration/shortage during pandemic	Specific levers:		
	Policies:		
	System-level decisions:		
Recruitment & Retention Strategies to inform future state	Description of strategy:		
	Impact of strategy:		
Other important areas of consideration	Nurse Migration:		
	Nurse Shortage:		
Key documents to share	Grey literature:		
	Media articles:		
Other comments or considerations:			



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