

From Intuition to Innovation: Harnessing Tacit Knowledge for Public Innovation
A case study on the design of policy measures to address COVID-19 at the
Public Health Agency of Canada

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Acronyms

EC	Economics and Social Science Services Classification
GAC	Global Affairs Canada
MC	Memorandum to Cabinet
PCO	Privy Council Office
PHAC	Public Health Agency of Canada
PTs	Provinces/Territories
TBS	Treasury Board Secretariat
TB Sub	Treasury Board Submission

Abstract

This research explores how federal policy practitioners applied their tacit knowledge during the COVID-19 pandemic to design policy measures addressing this public health crisis. A qualitative case study involving semi-structured interviews with policy practitioners at the Public Health Agency of Canada (PHAC) examined their experiences navigating the demands and uncertainties of rapidly developing pandemic response policies. The findings revealed practitioners' heavy reliance on tacit knowledge - their accumulated experiences, intuition and contextual understanding - to fill information gaps and adapt to changing circumstances. However, they faced challenges articulating this personal, context-specific knowledge. The study highlights the role practitioners' tacit insights played in crisis policy development, demonstrating the importance of integrating both informational and inspirational design approaches. By institutionalizing practices that embrace tacit knowledge and diverse perspectives alongside empirical evidence, policy development processes can become more responsive and innovative, better equipping governments to address complex public challenges.

Résumé

Cette recherche explore comment les praticiens des politiques au gouvernement fédéral ont appliqué leur savoir tacite pendant la pandémie de COVID-19 pour concevoir des politiques visant à répondre à cette crise de santé publique. Une étude de cas qualitative comprenant des entretiens semi-structurés avec des praticien.nes des politiques de l'Agence de la santé publique du Canada (ASPC) a permis d'examiner leurs expériences face aux exigences et aux incertitudes liées à l'élaboration rapide de politiques pour répondre à la pandémie. Les résultats ont révélé que les praticien.nes s'appuient sur leur savoir tacite - leur expérience accumulée, leur intuition et leur compréhension du contexte - pour combler les lacunes en matière d'information et s'adapter aux circonstances changeantes. Toutefois, ils.elles ont éprouvé des difficultés à articuler ces connaissances personnelles et spécifiques au contexte. L'étude souligne le rôle que le savoir tacite des praticien.nes a joué dans l'élaboration des politiques de crise, démontrant l'importance d'intégrer à la fois les approches de conception informationnelle et inspirationnelle. En institutionnalisant les pratiques qui intègrent le savoir tacite et les perspectives diverses aux côtés des preuves empiriques, les processus d'élaboration des politiques peuvent devenir plus réactifs et innovants, et mieux équiper les gouvernements pour faire face à des défis publics complexes.

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I would like to thank Philippe Dufort for introducing me to the concept of tacit knowledge and its potential to my research, as well as Michele Mastroeni for the opportunity to contribute to a research project that sought to capture tacit knowledge through semi-structured interviews.

I would like to thank research participants and policy practitioners F, K, N, S, T, and U for sharing insights into navigating an unprecedented public health crisis and the challenges of rapidly developing pandemic response measures. Their meaningful contributions were invaluable to understand the use of tacit knowledge during an ever-evolving emergency response.

Personal acknowledgements

In the grand scheme of things, five years may seem relatively short, yet during this period, a multitude of significant events unfolded that impacted my academic journey. To start with, COVID-19 for once changed everything and within this period, I encountered various challenges, including my mother's battle with cancer, undergoing two surgeries myself, coming to terms with an ADHD diagnosis, and witnessing my mother's life being jeopardized three times during an extended hospital stay. During all this, I worked full-time, adapting to new positions three times, all while working on my thesis.

COVID-19 was not all bad, restrictions imposed by the pandemic allowed me to clear my social calendar and dedicate more time to writing. During this period, I discovered a supportive community through Thèsez-vous. It initially began with virtual writing sessions during lockdowns, virtual retreats became in-person and eventually lead to in-person writing sessions and friendships.

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Chapter 1 : Introduction

“People are talking to their governments on 21st-century technology, the governments listen to them on 20th-century technology and provide 19th-century responses.”

- Madeleine Albright (Diamond, 2019)

Background

On March 11, 2020, the day the World Health Organization (WHO) declared the COVID-19 pandemic, there were over 100 reported cases in Canada (Office of the Auditor General, 2021b, p. 3; Public Health Agency of Canada, 2020a, pp. 61–62; World Health Organization, 2020). Provinces and territories declared a state of emergency (COVID-19 Emergency Response Act, 2020; COVID-19 Related Measures Act, 2020; Declaration of Emergency, O Reg 50/20, 2020; Public Health (Emergency Powers) Amendment Act, 2020) and implemented large-scale public health measures: physical distancing, closure of schools and universities, and restricted gatherings (Alphonso, 2020; Friesen, 2020; Picard, 2020). Essential services (grocery stores, pharmacies) remained open while non-essential businesses significantly reduced their operations, and employers advised their employees to work from home where possible (Baral et al., 2020, p. 12; Senate of Canada, 2020, p. 12). Canada and the United States closed the border for non-essential travel. The federal government recommended avoiding non-essential travel outside of

Canada and instructed travelers to self-isolate upon their return (Global Affairs Canada, 2020; Homeland Security, 2020; Office of the Auditor General, 2021b, p. 3; Osman, 2020; Prime Minister's Office, 2020; Public Health Agency of Canada, 2021; Public Safety Canada, 2020). On April 19, 2023, there were 4,741,301 cumulative cases of COVID-19 and 52,247 deaths reported in Canada, and 685,780,481 cumulative cases and 6,843,264 deaths worldwide (Worldometer, 2023a, 2023b).

COVID-19 is an infectious disease caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Gorbalenya et al., 2020, p. 2) that has had a major impact on every aspect of society in Canada and internationally. When COVID-19 hit China at the end of 2019, the virus seemed far, far away. It quickly spread to Europe in early 2020 (Bentzen & Torfing, 2022, p. 6; Departamento de Seguridad Nacional, 2020; Mascio et al., 2020, p. 622; Mintrom & O'Connor, 2020, p. 205). At the time, Canada hoped to be able to contain or slow down the virus but ultimately struggled to do so (Donnelly, 2020; Payne, 2020a, 2020b).

Impacts of the COVID-19 pandemic on government

The COVID-19 pandemic caught governments worldwide off guard with its unprecedented health, economic, social, and policy impacts (Blair, 2020; Zaki & Wayenberg, 2020). While previous infectious disease outbreaks such as Severe Acute Respiratory Syndrome (SARS) in 2002-2003 and H1N1 in 2009-2010 provided a preview of the potential risks, they were not of the same scale, duration, or intensity as COVID-

19. Despite warnings from experts about the risk of pandemics for years, past outbreaks such as SARS, Middle East Respiratory Syndrome (MERS), H1N1, and Ebola were not deemed threatening enough to prompt action and adequately prepare for a pandemic (Bourgon, 2010; Cabinet Office, 2017, pp. 9, 34; Coats, 2019, p. 21; Global Preparedness Monitoring Board, 2019, p. 12; Maxmen & Tollefson, 2020, p. 26; Naylor, 2003, p. 16; Qualls et al., 2017, p. 3; World Economic Forum, 2019, p. 46).

In the Spring of 2020, once the Government of Canada realized it could not avoid the COVID-19 pandemic, it became top priority for departments and agencies. The government was faced with the daunting task of containing the spread of the virus, limiting the impact on the economy, providing assistance to businesses and Canadians, and protecting the border (Boin, Brock, et al., 2020, p. 356; Department of Finance Canada, 2020; Johnson, 2022a, p. 74; Office of the Auditor General, 2021a, p. 5; Prime Minister of Canada, 2021).

The federal government (as well as provincial and territorial governments) responded quickly with emergency measures (Breton et al., 2024, p. 36; A. R. Migone, 2020, p. 382; Taylor-Vaisey, 2020, p. 62; Turnbull & Bernier, 2022, pp. 539–540). Policy practitioners could not anticipate what the pandemic was going to require of them and for how long. They were sent home, with little more than their notebooks and shoes, to work on emergency measures at a scale and range that had never been seen before to prevent major socio-economic and public health consequences (Boin, Brock, et al., 2020, p. 352; Ireton, 2020; Treasury Board of Canada Secretariat, 2020).

Due to the level of urgency, the public service had to quickly adapt its processes; managers had to trust their employees' skills, motivation and capability to complete their work independently and resourcefully under unpredictable conditions with less direct supervision (Bentzen & Torfing, 2022, p. 2; Breton et al., 2024, p. 20). Departments and agencies often had only a few days to draft and submit shorter than usual policy proposals to Cabinet (Health Canada & Public Health Agency of Canada, 2020, p. 8; Turnbull & Bernier, 2022, pp. 542, 544). The federal government announced the Canada Emergency Response Benefit (CERB) for workers impacted by COVID-19 on March 18, 2020, five working days after the declaration of the pandemic by the WHO (Office of the Auditor General, 2021a, p. 5). Many practitioners, including numerous executives, worked day and night for weeks, if not for months on end, to mitigate the impacts of the pandemic (Health Canada & Public Health Agency of Canada, 2020, p. 7).

Canada has experienced various crises in the past, including economic recessions, as well as natural disasters such as floods and wildfires (Independent Electricity System Operator, 2021; Public Safety Canada, 2019, 2021; Statistics Canada, 2020a; The Canadian Press, 2017). While not occurring on Canadian soil, the terrorist attack of the World Trade Center on September 11, 2001 also had significant and lasting policy implications in Canada (Brousselle et al., 2020, p. 370). Never having faced a crisis of the scale of COVID-19, policy practitioners had to rely on their expertise, explicit and tacit knowledge, assumptions, and the limited data available to design, modify, and adapt

policies for an evolving situation that is still ongoing over four years later, but not to the same extent.

Three years and multiple waves later, the pandemic was downgraded to an ongoing health issue by the WHO, on May 5, 2023. (Guterres, 2022; Hassan et al., 2021, p. 396; Office of the Auditor General, 2021b, p. 4; World Health Organization, 2023).

Motivation and Positionality

My interest in this work stems from two perspectives: my experience as a policy practitioner in the federal government and my role as a researcher in the master's in social innovation program. I was a talent manager at the Policy Community Partnership Office for a mobility program with 10 policy practitioners spread across different departments when the COVID-19 pandemic began. I observed policy teams abruptly shift their focus to designing policies to address the pandemic's impacts on their portfolios, often with limited or no available data. I felt removed from the crisis and was eager to contribute in any way possible. In the summer of 2020, I embarked on a two-month assignment at the Public Health Agency of Canada (PHAC), to provide respite to staff who had been working continuously since March, as the agency was seeking additional policy practitioners to keep up with the workload (Turnbull & Bernier, 2022, p. 545). Practitioners had to address the impact of COVID-19 with little to no background and expertise, and had to use their skills to find solutions to volatile, uncertain, complex, and ambiguous policy issues (C. K. Ansell et al., 2021, p. 950; Van Der Wal, 2020, p. 10). As a researcher, I wanted to

contribute to the study of public service innovation, bringing a practitioner's perspective to research that has been conducted mostly from a theoretical perspective by academics. Overall, my dual perspective as a policy practitioner and researcher has allowed me to gain valuable insights into the challenges and opportunities for public innovation in times of crisis, and I hope that my contributions can inform future research and open possibilities to better address complex challenges, and the needs of the population.

Research Problem

The COVID-19 pandemic posed unprecedented challenges for policy practitioners who had to quickly design and implement policy measures to address a rapidly evolving public health crisis. Despite the crucial role of policy practitioners in responding to such crises, our understanding of how they utilize their tacit knowledge to design policy measures under these circumstances is limited. This poses a significant gap in our understanding of public policy design, particularly in a crisis context, where quick, innovative policy responses are needed.

Research Objectives and Question

The three objectives of this research are to:

- Examine the experiences of policy practitioners in navigating the demands of urgently designing pandemic policies in a fast-paced environment.

- Explore how policy practitioners at the Public Health Agency of Canada (PHAC) applied their tacit knowledge to rapidly develop policy responses to the evolving COVID-19 pandemic.
- Understand lessons learned from the crisis response about leveraging practitioners' tacit knowledge that could support public innovation when not facing crisis.

The research question seeks to investigate how policy practitioners utilized their tacit knowledge to develop policy measures to address the COVID-19 crisis, and how leveraging and mobilizing tacit knowledge can support public innovation.

This study aims to address practical knowledge gaps on how tacit knowledge is leveraged in the design of public policy, particularly during crises. It explores how policy practitioners at PHAC applied their tacit knowledge to develop COVID-19 response measures. Insights into how tacit knowledge was harnessed provides valuable perspectives into adapting and innovating under pressure.

The findings emphasize the importance of tacit knowledge in designing policy in uncertain times when science and knowledge are constantly evolving. The conclusion suggests avenues to build on insights, highlighting practitioners' roles as global crises like pandemics and climate change emerge more frequently, and addressing intractable problems such as poverty or homelessness.

Thesis Structure

This thesis starts by establishing the context that policy practitioners in the federal government are not typically trained to design policy for long-term emergencies that affect all aspects of life. This is followed by a review of the literature on design in the context of policy, tacit knowledge, and public innovation to fill a practical knowledge gap in the literature. The conceptual framework and methodology chapters present how the research was designed, conducted, and analyzed. The thesis then presents the results of interviews with the policy practitioners, outlining how they used their tacit knowledge to design policy measures. Finally, the research findings, limitations and future directions are discussed.

The introduction has presented the background, objectives, and research question that guide this research of how federal policy practitioners applied their tacit knowledge during the COVID-19 pandemic to design policy measures. Before going into the literature review and methodology, it is important to establish the broader context surrounding the policy development process in the Government of Canada. The next chapter provides an overview of the typical policy development process as well as the background of policy practitioners who are the focus in this research. Additionally, it positions the case study within PHAC, the organization at the forefront of the federal COVID-19 response where participants were employed. Understanding this context is important for recognizing the institutional structures and professional backgrounds that informed and influenced how practitioners experienced this emergency situation. With this context established, the literature review will explore key concepts underlying this research.

Chapter 2 : Context

The COVID-19 pandemic presented an unprecedented challenge for governments worldwide, testing their ability to develop and implement effective policies to address the rapidly evolving public health crisis while mitigating its economic and social impacts. The uncertainty surrounding the virus, its transmission, and its effects on various populations made it difficult for policy practitioners and senior management to make informed decisions, especially in the early stages of the pandemic.

At the onset of the COVID-19 pandemic, all sectors faced uncertainty as the science around SARS-CoV-2 was still emerging, and the public health, economic and social impacts were unknown (Rubin & de Vries, 2020, p. 1; Tasker, 2020). COVID-19 was the first public health crisis in more than a century, since the Spanish flu, with such severe economic and social consequences, which no government, including the federal government, could avoid (Baldwin, 2021; Mintrom & O'Connor, 2020, p. 210; Moynihan & Roberts, 2021, p. 153; Ortega & Orsini, 2020, p. 1258; Sachs et al., 2020, p. 1102).

During the early stages of the pandemic, key information about the virus, such as its infectivity rate, mortality rate, modes of transmission, and identification of the most vulnerable populations, were uncertain (Baral et al., 2020, p. 13; Bullard et al., 2021, p. 1; Gray, 2015, p. 389). While transmission of the virus was thought to occur via surfaces and droplets, aerosol spread was later confirmed. The importance of masks and distancing was not immediately established by science but became essential to limiting spread (Bulfone et al., 2021, p. 550; Center for Disease Control and Prevention, 2020,

2021; Dasgupta et al., 2021, p. 46; Greenhalgh et al., 2021, p. 1603; Konda et al., 2020, p. 6339; Leung, 2021, p. 5; Ogden et al., 2022, p. 293).

The pandemic brought society and the economy to a near standstill and highlighted and exacerbated existing social and economic vulnerabilities (C. K. Ansell et al., 2021, p. 1; Public Health Agency of Canada, 2020a, pp. 19–37; Rosenberg et al., 2020; Sachs et al., 2020, p. 1103; Shah, 2021, p. 503). The economic impact was significant, with the Gross Domestic Product (GDP) falling 18% from February to April 2020, and the unemployment rate surging from 5.7% in February to 13.7% in May. Non-essential businesses declined, especially tourism, hospitality, and food services (Statistics Canada, 2020b, 2020a).

The Government of Canada had to respond to the COVID-19 crisis, despite the lack of clear scientific evidence. While the federal government had been relatively successful in containing the 2002-2004 SARS outbreak and developed plans based on lessons learned from that event, the urgency and novel nature of the COVID-19 crisis required a reimagined approach to policy development and implementation (Gray, 2015, p. 389; A. R. Migone, 2020, p. 383; Naylor, 2003, p. iii).

The COVID-19 pandemic tested the federal government's ability to develop and implement policies meeting population and economic needs while mitigating the public health threat. This chapter provides context on the typical policy development process and provides the background of policy practitioners, who are non-partisan employees, in

the Government of Canada (Prince, 2007, p. 168; Treasury Board of Canada Secretariat, 2022a).

Policy Development Process

Public sector structures are often rigid and the typical approach to public policy development is not designed to respond to increasingly complex, interrelated and unpredictable policy issues (Bason, 2014, p. 5; Bourgon, 2011, p. 14; Junjan, 2020, p. 24; Mortati et al., 2018, p. 562; Peters, 2020, p. 132).

Public administration plays a crucial role in bridging the gap between political will and practical solutions (Bourgon, 2011, p. 8). Public policy is a course of action or inaction adopted by public authorities for the public good on behalf of citizens to respond to an issue, an interconnected set of issues or opportunities under the authorities' jurisdiction. Public policies define goals and means to achieve with policy instruments (Bernard, 2014; McMullin, 2012, p. 348; Mintrom & Williams, 2013, p. 222; Pal, 2014; Perl, 2020, p. 27; Schneider, 2013, p. 222). Public policy does not grow in a vacuum; external forces, consisting of socioeconomic and political contexts, stakeholders, as well as the media, politicians, senior officials, and policy practitioners raise, identify, and/or define collective problems that influence federal government priorities (Howlett, 2020, p. 113; Perl, 2020, p. 23).

The pandemic, in some ways, is like other policy challenges, as governments often struggle to identify effective interventions in various domains, including education, immigration, and public safety. Despite decades of trial and error, definitive effective solutions to these complex challenges remain elusive (Linder & Peters, 1984, p. 237).

Governments are vertical and hierarchical institutions; the typical policy development process is very much top-down; the Government of Canada's priorities are announced in the Speech from the Throne, Ministers' mandate letters, Budget, economic updates, and departmental plans (Bourgon, 2011, p. 9; Department of Finance Canada, 2023; Governor General, 2021; Ie, 2023, p. 312; Johnson, 2022b, p. 107; Prime Minister of Canada, 2021; Treasury Board of Canada Secretariat, 2023a). The public service, through medium-term planning exercises and budget proposals, bring policy issues to the attention of ministers, whereas external stakeholders raise issues which could be integrated into the government's agenda through engagement, lobbying and the media.

Despite the challenges posed by the COVID-19 pandemic, policy practitioners in the federal government demonstrated resilience and adaptability in providing sound policy advice to address Canada's response. Although many lacked experience working through major crises like the 2008 recession or the SARS outbreak, and institutional knowledge was limited due to staff turnover, they managed to develop effective policy recommendations for dealing with the novel coronavirus (Government of Canada, 2021b, 2021a; Office of the Auditor General, 2021a).

The typical approach to the policy development process consists of several iterative steps: issue identification and definition, policy research and analysis, generating policy solutions and alternatives, stakeholder consultation, developing policy proposals, decision-making, policy implementation, and policy monitoring and evaluation (Canada School of Public Service, 2022). However, in practice, the policy development process does not always operate under ideal circumstances, nor does it always start with research. It can start or stop at any step, such as implementation or decision-making, which can happen when there is a change of government such as the dissolution of the national childcare program in 2006, or an external shock, such as a massive decrease in immigration levels due to the pandemic (L. Anderson et al., 2016, p. 13; Delacourt, 2010; Immigration, Refugees and Citizenship Canada, 2021, p. 15; Voyer, 2007, p. 219). The typical policy development process is iterative and usually takes a long time to go from issue identification to policy monitoring and evaluation. Evaluation results then feed back into the policy development process (Apolitical and the Policy Community Partnership Office, 2020, pp. 5–7; Nelson, 1998, p. 472).

However, the COVID-19 pandemic significantly disrupted the typical policy development process, requiring policy practitioners to respond rapidly to the evolving crisis. This raises the question this study seeks to answer: how did policy practitioners apply their tacit knowledge to design pandemic response measures under such extraordinary circumstances?

Policy Practitioners

There are no exclusive classifications to identify policy practitioners, who are the principal actors in the federal public service policy development process (G. Anderson, 1996, p. 483; Bailey, 2017, p. 2; Brooks, 2018, p. 29). They are split across various classifications, the main one, “Economics and Social Science Services” (EC), is not exclusive to policy (Craft & Harty, 2017, p. 277; Henderson & Craft, 2022, p. 458; Shepherd & Stoney, 2018, p. 73). In addition to ECs, “Program” (PM), “Commerce” (CO), and “Communications” (IS) classifications also contribute to the policy development process (E. A. Lindquist, 2018, p. 166; Shepherd & Stoney, 2018, p. 73). This research focuses on the work of public servants in the EC classification, which in practice represents the core classification when it comes to policy function.

Policy practitioners have, in general, similar backgrounds; to hold a position under the EC classification, candidates must have a B.A with an acceptable specialization in economics, sociology, or statistics. Practitioners with undergraduate or graduate degrees in other disciplines must be able to demonstrate a specialization in economics, sociology or statistics through an acceptable combination of education, training and/or experience (Treasury Board of Canada Secretariat, 2015).

EC job descriptions are rather generic; subject-matter expertise is often not considered an essential qualification. Common job titles are policy analysts, advisors, economists, researchers, program evaluation officers, and managers, but also include statisticians,

negotiators, and paralegals (Brooks, 2018, p. 42; Prince, 2007, p. 165; Treasury Board of Canada Secretariat, 2017). The classification ranges from EC-01 to EC-08; managers and assistant directors are mostly EC-07s or EC-08s (Henderson & Craft, 2022, p. 465; Treasury Board of Canada Secretariat, 2022a).

An essential qualification for policy practitioners is to demonstrate the ability to analyze and synthesize information quickly, provide advice to support decision-making, and the capacity to communicate complex issues (Bédard, 2015, p. 2; Howlett, 2009, p. 162; E. A. Lindquist, 2018, p. 170; Veselý, 2017, p. 141; A. M. Wellstead, 2019, p. 170; Wu et al., 2015, p. 168). In addition, practitioners must have the ability to handle uncertainty and pivot when there is a change in direction, priorities or context (G. Anderson, 1996, p. 483; Prince, 2018, p. 450).

Practitioners' roles in the policy development process are to frame issues within the federal government's jurisdiction, conduct research, stay abreast of research and policy in Canada and internationally, identify trends from data and reports; generate policy options; consult within and across departments, with provinces and territories, and external stakeholders; develop policy proposals; and make recommendations to senior officials and Ministers (Craft, 2016, p. 12; Nelson, 1998, p. 472; A. Wellstead & Stedman, 2010, p. 894). Ministers, Treasury Board, Cabinet, Minister of Finance and/or, the Prime Minister make decisions on policy and/or funding, depending on the authority sought (Apolitical and the Policy Community Partnership Office, 2020, p. 41; H. Colebatch, 2010, p. 41; Privy Council Office, 2013, p. 1).

Functions, activities (planning, environmental scanning, socio-economic research, statistical analysis, program design, consultations and engagement, monitoring and evaluation), and products (briefing notes, presentations, speaking points, speeches, budget proposals, Memoranda to Cabinet, Treasury Board Submissions, performance monitoring and reporting, and communications) are similar from position to position, from department to department (G. Anderson, 1996, p. 474; Craft & Wilson, 2018, p. 150; Howlett, 2011, p. 255, 2015, p. 178; Shepherd & Stoney, 2018, p. 74).

Policy practitioners, who are often generalists, develop their policy skills through experience and gain knowledge from a variety of policy areas, providing them with a broad perspective on policy issues and the ability to make connections between them (G. Anderson, 1996, p. 483; E. Lindquist & Desveaux, 2007, p. 123; Peters, 2015, p. 225). Much of their knowledge is tacit, as it is contextual and based on practical application (H. Colebatch et al., 2010, p. 12; Mitchell et al., 2021, p. 1,4; Rhodes, 2016, p. 5).

At the onset of the pandemic, on March 31, 2020, there were 18,876 full-time equivalents (FTEs) ECs in the core public administration out of a total of 231,176 FTEs. Two years later, this number had risen to 23,270 ECs out of 254,309 FTEs, representing approximately 9% of public servants (Treasury Board of Canada Secretariat, 2023b, 2023c).

Public Health Agency of Canada

In Canada, public health is a shared responsibility between the federal government, the provinces, and the territories. PHAC is the federal organization accountable for planning and coordinating a national response to infectious diseases that are a threat to public health. To ensure a coordinated approach to pandemic preparedness, all levels of government must collaborate with each other as well as with the private sector, non-governmental organizations, health professionals and the public (Government of Canada, 2023; Office of the Auditor General, 2021b; Robertson, 2020)

The Public Health Agency of Canada (PHAC) was created after SARS, in 2004, under the Health Canada portfolio to prevent illness and injury, respond to public health threats, encourage good physical and mental health, and provide information to support sound decision-making (Public Health Agency of Canada, 2019, 2020b). Before the creation of PHAC, Health Canada carried out most of the federal government public health activities (Naylor, 2003, p. 2).

PHAC was at the centre of the COVID-19 crisis, and the magnitude of the pandemic led to the creation of new functions within the agency. In the early stages of the pandemic, it quickly became clear that PHAC did not have sufficient capacity to design and implement all the necessary policy measures, as employees had been working long hours for months and were at risk of burnout. To address this, PHAC reassigned some practitioners to new functions, while others volunteered. In addition, policy practitioners from other

departments joined on short-term secondments, and some were eventually deployed to the agency (Health Canada & Public Health Agency of Canada, 2020, pp. 5–6, 9). Despite the increased capacity, practitioners had to design or advise on policy measures that they and the organization had no previous experience addressing, such as border control and professional sports (Office of the Auditor General, 2021b, pp. 28–29; Taranto, 2021; The Athletic Staff, 2022).

PHAC employed 2,340 FTEs, including 823 ECs at the beginning of the pandemic, on March 31, 2020. By March 2021, this number had increased to 3,281 FTEs, including 1,114 ECs. On March 31, 2022, the number of FTEs had risen to 4,254, with 1,431 ECs. Despite an increase of over 80% in FTEs during the pandemic, the proportion of ECs has remained steady at roughly one third of PHAC employees (Treasury Board of Canada Secretariat, n.d.-b, 2022b).

This study specifically focuses on policy practitioners at PHAC, as they were at the centre of Canada's policy response to the COVID-19 crisis. By investigating how these practitioners used their tacit knowledge to design and implement policy measures during the crisis, this research seeks to highlight the role tacit knowledge could play in advancing public innovation.

This chapter outlined important context regarding the crisis, the typical policy development process in the federal government, the role and background of policy practitioners, and the public health agency where this research is situated. This context

of the federal policy landscape and COVID-19 response establishes the real-world setting for the study. Building on this foundation, the next chapter will explore the key concepts at the core of this research – tacit knowledge and public innovation - through a review of literature that synthesize current theoretical knowledge and identify the gaps this study aims to address. The review establishes connections between these concepts to shape the conceptual framework that will guide the analysis.

Chapter 3 : Literature review

This research will address the practical knowledge gap (Miles, 2017, p. 5; Müller-Bloch & Kranz, 2015, p. 8) on the policy practices of working-level policy practitioners (Bédard, 2015, p. 2; Howlett & Wellstead, 2012, p. 53; A. Migone & Howlett, 2022, p. 693; A. Wellstead & Stedman, 2010, p. 895) and the application of tacit knowledge in the public sector (Gau, 2011; Ouédraogo & Rinfret, 2019, p. 253). Public administration literature predominantly centers on policy-makers, political advisors, senior officials, external stakeholders, and consultants (Ali et al., 2022, p. 9; Baskoy et al., 2011, p. 217; Béland, 2009, p. 42; Craft, 2016, p. 8, 2017, p. 328; Craft & Howlett, 2013, p. 192; Craft & Wilson, 2018, p. 147; Dutil & Migone, 2021, p. 122; Landry, 2021, p. 177; Noordegraaf, 2010, p. 51; Perl & White, 2002, p. 49; Rasmussen, 1999, p. 333; Rhodes, 2016, p. 2; Rinfret et al., 2010, p. 208; Wilson, 2015, p. 455; Zussman, 2013, p. 114). A lot of research has been published on tacit knowledge and organizational learning and knowledge management (Argyris, 1999; Augier et al., 2001; Cook & Wagenaar, 2012; Janson & McQueen, 2007; Lejeune, 2005; M. Li & Gao, 2003; Nonaka, 1994; Nonaka & Takeuchi,

1997; Orlikowski, 2002; Polanyi, 1966, 2012; Tsoukas, 2005a, 2015; Zimmerman, 2015) and on public innovation (Bason, 2018; Bekkers, 2007; Bijl-Brouwer et al., 2015; Meijer, 2019; Mulgan, 2014; Nesta, 2019; Osborne & Radnor, 2016; Torfing & Triantafillou, 2016). However, this thesis aims to bridge the gap between theory and practice by exploring how policy practitioners at the Public Health Agency of Canada (PHAC) utilized their tacit knowledge to design policy measures during the COVID-19 pandemic, and how leveraging this knowledge can support public innovation in times of crisis and beyond.

This literature review aims to explore the concepts of tacit knowledge and public innovation.

Tacit knowledge

Tacit knowledge has been defined and discussed by a number of scholars, including Michael Polanyi, Ikujiro Nonaka, and Haridimos Tsoukas (M. Li & Gao, 2003, p. 6; Nonaka, 1994, p. 16; Polanyi, 1966, pp. 135–146; Tsoukas, 2005a, p. 3).

Polanyi is credited with first coining the term tacit knowledge to distinguish it from explicit knowledge. Polanyi defined tacit knowledge as knowledge that is embedded in actions and behaviours and acquired through experiences. In contrast, explicit knowledge refers to codified knowledge that can be formally communicated through language (Chilton & Bloodgood, 2008, pp. 76, 77; Nonaka, 1994, p. 16; Polanyi, 2012, p. 96).

Nonaka builds on Polanyi's definition of tacit knowledge, describing it as having two dimensions: technical and cognitive. The technical dimension encompasses informal skills, while the cognitive dimension includes beliefs, mental models, and personal perspectives (Nonaka, 1991, p. 98, 1994, p. 21). Tacit knowledge is knowledge not yet articulated. Nonaka has developed four phases of knowledge conversion: the first phase is where tacit knowledge is converted to tacit knowledge from *socialization* (through apprenticeship), the second phase is the *combination* of the explicit knowledge of different people (in meetings), the third phase is the *conversion* of explicit knowledge into tacit knowledge and the fourth phase is when tacit knowledge is made explicit through *externalization*. (Nonaka, 1994, p. 16; 1997, p.111, Tsoukas, 2005, p15).

This definition of tacit knowledge diverges considerably from Polanyi's. Nonaka considers tacit knowledge as something that is not yet expressed but can be externalized into explicit knowledge, like a set of rules to be learned and then articulated. Tacit knowledge is considered as another method of transferring knowledge, not fundamentally different from learning through written instructions, as both result in knowledge that can be codified (Tsoukas, 2005b, p. 12).

For Tsoukas, tacit knowledge consists of specific details that we are subconsciously aware of while focusing on something else, and cannot be fully understood in isolation. This knowledge is context-dependent and loses its meaning when separated from the situation in which it's used. Analyzing these details outside of their original context, especially after an action, changes their significance. According to this approach, it is not feasible to

convert tacit knowledge into explicit knowledge because tacit knowledge is embedded in personal experiences, skills and specific contexts (Tsoukas, 2015, p. 472).

Contrary to Nonaka, Polanyi does not actively seek to articulate tacit knowledge (Grandinetti, 2014, p. 335) while Tsoukas is of the view that tacit knowledge is not awaiting conversion but is revealed through our actions (Tsoukas, 2005a, p. 16, 2015, p. 472).

According to Polanyi's definition, tacit knowledge is gained through the experience of taking action and intuitive understanding of the underlying principles of the practice (Wood et al., 2009, p. 72). While Nonaka suggests that knowledge is created through the dynamic interactions between individuals and their environment rather than in isolation (Augier et al., 2001, p. 127; Nonaka et al., 2000, p. 8). Both, Nonaka and Polanyi, consider tacit knowledge as personal, context-specific, and making sense intuitively (Boisot, 2002, p. 70; Krogh et al., 2000, pp. 5–6; Nonaka, 1991, p. 98; Polanyi, 1966, p. 145, 2009, p. 26; Tsoukas & Vladimirou, 2001, p. 975).

Concepts similar to tacit knowledge

Scholars have employed various concepts to describe practical knowledge gained through experience in addition to tacit knowledge. For instance, James C. Scott introduces the term "mētis," a Greek term that signifies local knowledge acquired through extended practice, requiring adaptation to changing circumstances (Scott, 2020, p. 311).

Activities that rely on *mētis* knowledge are challenging to teach or learn through instruction. Similar to Polanyi's concept of tacit knowledge, *mētis* knowledge is deeply rooted in action and practice and is difficult to articulate (Scott, 2020, pp. 177, 312, 313).

Another concept similar in its essence to tacit knowledge is "craft." Craft refers to an occupation or profession that is learned on the job, incorporating specialized skills and formal and experiential knowledge. Craft knowledge is not explicitly codified but is typically transmitted verbally or through observation. Craft expertise is developed through practical wisdom gained from firsthand experience (Fleming & Rhodes, 2017, p. 8; Goodsell, 1992, p. 8; Rhodes, 2016, p. 1).

The practice of policy is as much a craft as it is a science. It requires intuition, judgement, adaptability, and relationship skills, which are aligned with the inspirational approach to policy design. Simultaneously, policy practice relies on analytical methods and data, reflecting the informational approach (Prince, 2007, p. 165).

Alongside tacit knowledge, scholars have introduced concepts like *mētis* and craft to describe practical knowledge obtained through experience. These concepts emphasize the importance of action, practice, and specialized skills in various domains, including policy practice.

The definitions of tacit knowledge by Polanyi, Nonaka, and Tsoukas have important implications for policy development, especially in complex and uncertain environments like the COVID-19 pandemic:

- Polanyi emphasized the personal, non-articulated nature of tacit knowledge. This suggests policy practitioners should value the experiential knowledge of frontline workers, experts, stakeholders, and end users involved in the policy process.
- Nonaka highlighted the subjective nature of tacit knowledge. This means understanding how factors like values and emotions shape how individuals interpret policy issues.
- Tsoukas focused on the contextual nature of tacit knowledge, underscoring the importance of understanding the context surrounding policy development.

This comprehensive approach leveraging tacit knowledge is vital for developing robust, adaptive policies suited to the complex realities of crises like COVID-19, where situational awareness and rapid adjustments are needed.

Innovation

Governments recognize the necessity to innovate in order to address highly complex and interconnected issues that will improve services to citizens, meet the evolving needs of diverse populations, increase efficiency, and respond to social, technological, economic, ecological/ environmental, and political changes (de Vries et al., 2014, p. 3; Demircioglu, 2019, p. 219; Employment and Social Development Canada, 2018, p. 5; Head, 2022, pp.

123, 126; Kaur et al., 2022, pp. 10–11; Romme & Meijer, 2020, p. 149; van Buuren et al., 2020, pp. 3–4; Vivona et al., 2020, p. 5).

The Government of Canada has recognized the importance of innovation in the Clerk's annual reports to the Prime Minister on the public service of Canada for decades (Privy Council Office, 1992, 1998, 2001, 2005, 2010, 2015, 2018, 2021).

However, several factors hinder the public sector's development and implementation of transformative innovation. No single department or level of government can solve these issues on their own (Bentzen & Torfing, 2022, p. 3; Christiansen & Bunt, 2016, pp. 41–42), yet the siloed nature of large bureaucratic structures creates barriers to collaboration within and between departments as much as within and between different levels of government (Duffy & Cook, 2019, p. 1194; Osborne & Radnor, 2016, p. 55; Peters, 2015, p. 220). Additionally, a risk-averse culture prevails and takes precedence over embracing change. Moreover, short political cycles further exacerbate the situation by discouraging long-term thinking and prioritizing low-hanging fruit solutions. These combined factors impede the ability of the public sector to address and solve deeply entrenched complex social problems (Bourgon, 2017, p. 83; Torugsa & Arundel, 2017, p. 900).

Different types of innovation can be used to address complex challenges, such as social innovation, public sector innovation, public innovation, policy innovation, system innovation, process innovation, and technological innovation. There is no standard definition of innovation in the public sector literature (Munro, 2015, p. 222). This research

will focus on the concepts of innovation, social innovation, public sector innovation, and public innovation, whose definitions are largely inspired by social innovation.

Social Innovation

Westley et al. (Westley et al., 2017, p. 4) define social innovation as the creation of “new programs, policies, procedures, products, processes or designs” that aim to address social or ecological issues in a way that changes resource flows, social norms, and the underlying cultural values of the system that originally caused the problem (K. McGowan et al., 2021, p. 61; Westley, 2008, p. 1). Employment and Social Development Canada’s Social Innovation and Social Finance Strategy Co-Creation Steering Group defines social innovation as a solution to social or environmental challenges (e.g. programs, services, organizational structures) that, once implemented, leads to better outcomes than existing approaches. Social innovations can fundamentally transform organizations, communities or entire systems to create positive change (Employment and Social Development Canada, 2018, p. 11).

Both definitions refer to using innovative processes to address social and ecological problems. One aims to address root causes, while the other seeks to improve outcomes. However, both definitions share the common objective of transforming social organizations through innovation.

Murray et al.’s definition of social innovation is a bridge to public innovation. As Westley and the Social Innovation and Social Finance Strategy Co-Creation steering group state,

social innovation uses new processes to meet social needs, but instead of transforming social organizations, Murray et al. support the formation of relationships and collaborations (Murray et al., 2010, p. 3).

Public Innovation

Even though research on organizational innovation expanded significantly in the 1960s and 1970s, there was little attention paid to innovation in the public sector (Djellal et al., 2013, p. 98; Sørensen & Torfing, 2022, p. 37). The concept of public innovation emerged with New Public Management in the 1980s, which sought to adopt private sector practices to increase productivity, efficiency, competitiveness, and reduce costs (S. F. Borins, 2014, 2014; Christiansen, 2013, pp. 62, 65; de Vries et al., 2018, p. 8; Fuglsang, 2010, p. 69; Head, 2019, p. 190; Kattel et al., 2023, p. 1; Y. Li, 2019, p. 3; Mazzucato & Kattel, 2020, p. 7). However, barriers such as greater accountability, a short political cycle, siloed mentality, a risk-averse culture in public administration, and fear of negative media coverage are more prevalent in the public sector than in the private sector (Hood, 2007, p. 137; Hoytema, 2019; Lewis et al., 2018, p. 289; Osborne & Radnor, 2016, p. 55; Savoie, 2015, p. 138).

The literature on innovation in the public sector has primarily concentrated on the internal mechanisms and dynamics within governments (Bernier et al., 2015, p. 836). The drivers of public sector innovation have been fiscal constraints and the desire to improve services

delivered to citizens and users (S. Borins, 2001, p. 311; Criado et al., 2023, p. 1; Sørensen & Torfing, 2022, pp. 37, 40).

Geoff Mulgan defines public sector innovation as the process of generating, developing, and applying new ideas or approaches that provide value to the public. These ideas or approaches must have some element of novelty rather than just being an improvement on what already exists. Furthermore, they must also be adopted and utilized, and they must serve a practical purpose (Mulgan, 2014, p. 5).

Jocelyne Bourgon, the former clerk of the Privy Council, the highest-ranking public servant in the Government of Canada, defines public innovation as solutions that are innovative in nature, aimed at serving the public interest and requiring the utilization of government resources to achieve this purpose. She adds, “Public innovation is a core mission of government — that is, to invent solutions to the challenges faced by society that cannot be solved without some form of government intervention.” (Bourgon, 2011, p. 16, 2017, p. 83, 2019, p. 2).

While there are overlaps between Bourgon's and Mulgan's definitions of public innovation, both emphasizing the creation, development, and implementation of novel ideas that are adopted, useful, and provide public benefit, Bourgon's definition explicitly includes the necessity of government intervention.

Public innovation differs from social innovation in that it benefits society at a larger scale and uses instruments specific to the state, such as tax credits, grants and contributions, transfers to other levels of government, regulations, and legislation to fulfill a need or address an issue (Howlett, 2020, p. 167; Policy Lab UK, 2020; Treasury Board of Canada Secretariat, n.d.-a).

Other definitions of public sector innovation emphasize the importance of generating public value and serving a purpose. They also highlight that innovative ideas must be acted upon through implementation to make an impact. Additionally, they note that state interventions do not exist in a vacuum and are surrounded by political and democratic context (Agranoff, 2014, p. 42; C. K. Ansell & Torfing, 2014, p. 5; Chen et al., 2020, p. 1674; Christiansen, 2013, pp. 26, 83; Mazzucato, 2022, p. 4; Mulgan, 2007, p. 26, 2014, p. 5; Thøgersen et al., 2021, p. 1264; Waldorff et al., 2014, p. 70). Overall, there are common elements in most definitions of public innovation, and they generally agree that the government has a role to play in fostering an innovative society. Successful innovation requires both the capacity to apply knowledge in practice and to continuously learn.

Identification of Gaps in the Literature

The public policy literature focuses primarily on policymakers and the political process and pays little attention to the work of policy practitioners (Considine, 2014, 2), including in times of crisis.

Moreover, in the policy design literature, public policy development is not considered a conscious and deliberate act of design by practitioners (Dryzek, 1983: 345).

Tacit Knowledge Gap

While a significant body of literature exists on tacit knowledge and its role in organizations, limited attention has been paid to how public sector policy practitioners apply their tacit knowledge accumulated through experience (Zimmerman, 2015, p. 2). This research aims to address this gap by exploring how practitioners at PHAC utilized their tacit knowledge to design policy measures during the uncertainty and time pressures of the COVID-19 pandemic response.

Public Innovation Gap

There is less focus on the processes and practices practitioners employ to design and implement novel policy solutions to serve the public interest, especially in crisis contexts (Aagaard et al., 2024, p. 4; Boin, Lodge, et al., 2020, p. 2; Boin & 't Hart, 2022, p. 2; Crow et al., 2023, p. 11). This thesis seeks to contribute insights on how policy practitioners use their tacit knowledge during a crisis.

Bridging Tacit Knowledge and Public Innovation

The literature lacks an integrated examination of how practitioners' tacit knowledge can be mobilized to foster public innovation. By investigating this intersection, the research intends to shed light on an underexplored area - the role of policy practitioners' accumulated wisdom and practical experiences in catalyzing public policy innovation to tackle complex societal challenges amidst crisis conditions. Insights from this study can inform strategies to better utilize the tacit knowledge assets across government to bolster public innovation capacity.

Through this literature review, the chapter identified gaps in the existing literature. There is a lack of research on the role of practitioners in leveraging tacit knowledge and applying design approaches in the policy development process.

Chapter 4 : Conceptual framework

This chapter introduces design approaches in policy as the theoretical framework guiding the research and provides conceptual clarity by defining key concepts of design for policy, tacit knowledge, and public innovation. It also outlines the theoretical framework for examining the research question, centered on exploring how practitioners applied different design approaches (informational versus inspirational) and drew upon their tacit knowledge to design policy measures during the rapidly evolving COVID-19 pandemic.

Utilizing this theoretical framework allows for a structured investigation into the intersection of design, and practitioners' tacit knowledge within the context of a crisis.

Design in the context of policy

The role of government is to build a resilient society that has the capacity to absorb shocks, adapt to unpredictable circumstances, avoid or manage crises and learn from them (Bourgon, 2010, p. 211, 2011, p. 60; Head, 2019, p. 190; Mazzucato & Kattel, 2020, p. 9). However, traditional approaches have failed to solve complex and interconnected issues, such as economic growth, income inequality, climate change, terrorism, opioid crisis, etc. (C. K. Ansell et al., 2021, p. 2; de Vries et al., 2018, p. 3; Demir, 2022, p. 1; Lidman, 2023, p. 1; K. A. McGowan et al., 2014, p. 1), highlighting the need for fresh thinking around policy solutions that can address multidimensional problems (Hermus et al., 2020, p. 2).

In this context, there has been an increasing focus on how design, which Herbert Simon characterized as the process of devising courses of action to transform existing situations into more preferable ones, can play a significant role in public administration (Bason, 2017, p. 20; Buchanan, 1992, p. 9; Hermus et al., 2020, p. 3; Kimbell, 2009, p. 3; Y. Li, 2019, p. 3; McMullin, 2012, p. 349; Romme & Meijer, 2020, p. 150; Simon, 1988, p. 67).

Both design and policy aim to find solutions to real-world challenges (Barzelay & Thompson, 2010, p. S296; George, 2020, p. 524; McMullin, 2012, p. 349; van Buuren et

al., 2020, p. 4). As part of the conceptual framework, this section explores concepts of design in the context of policy by providing definitions of different design approaches: policy design and design for policy.

Policy Design

In the 1980s-1990s, research on policy design, originating in policy studies, focused on policy formulation and choice of policy instruments to reach desired outcomes (Bailey, 2017, p. 3; Dryzek, 1983, p. 346; Howlett & Lejano, 2013, p. 357; Linder & Peters, 1990, p. 303; May, 1991, p. 187; Mortati et al., 2022, p. 399; Schneider & Ingram, 1988, p. 61). Today, the field of policy design research is seeing a resurgence as governments seek to understand how to create better policies (Capano & Woo, 2018, p. 426; Howlett, 2014, p. 188; Peters, 2020, p. 131).

John S. Dryzek defines policy design as "the process of inventing, developing and fine-tuning a course of action with the amelioration of some problem or the achievement of some target in mind." Additionally, Dryzek notes that the design process must be adapted to the specific conditions of the decision, taking into consideration the complexity and uncertainty of the situation, and the possibility of reducing these factors through feedback loops (Dryzek 1983, 346).

Michael Howlett argues that policy design is an intentional and conscious process aimed at clearly defining policy objectives and strategically linking them to a combination of

instruments or tools intended to achieve those objectives. Policy design necessitates that practitioners have a strong awareness and understanding of the broader policy context in which they are operating. This knowledge on the context allows them to carefully select the appropriate mix of policy tools and implementation approaches to maximize the likelihood of the intended policy objectives being successfully implemented (Howlett et al., 2015, pp. 291–292).

For Dryzek, design is a collective activity that anticipates the consequences of the actions, whereas Howlett looks for the right mix of policy objectives and policy instruments. Design is viewed as a means to address identified needs effectively and efficiently to achieve specific outcomes (Hermus et al., 2020, p. 3) . Design, whether implicit or explicit, is always present and has an impact on the success or failure of that policy (Peters, 2020, p. 131).

Design for Policy

At the intersection between theory and practice on “design” and “policy,” there is an emerging concept of ‘design for policy’ from the field of design, developed by Christian Bason (Bason, 2014; Mortati et al., 2022, p. 399). Government’s interest in design for policy has increased considerably since the late 1990s. However, the emerging field of design for policy still lacks a robust knowledge base. Despite this, the field continues to gain traction, as supported by the growing body of research and projects adopting this

approach (Hermus et al., 2020, p. 3; Kimbell et al., 2022, p. 2; Monteiro et al., 2022, p. 5; Whicher, 2021, p. 252).

The concept of design for policy refers to design as an approach within the policy development process that can be mobilized to effectively tackle complex issues facing the public sector (Villa Alvarez, 2019, p. 9).

Bason views design for policy as an approach that can help better understand issues through user research, ethnography, and prototyping. It allows for co-creating policy options through collaborative methods that involve a range of stakeholders, including citizens. It gives tangible form to policies through designed artifacts, services, and experiences that stakeholders can engage with. Design for policy offers new ways for policy development to be more participatory, creative and focused on human experiences (Bason, 2016, pp. 4–5).

Having explored the concepts of policy design and design for policy, we can see there are different approaches that policy practitioners can take when applying design principles to policy development. The next section will outline a framework distinguishing two key design approaches relevant to this study.

Design Approach Framework

To analyze how policy practitioners leverage design approaches and tacit knowledge in their work, this study will use a framework proposed by Hermus et al. (2020) that contrasts two distinct design approaches - the informational approach and the inspirational approach. These approaches were proposed by Sanders regarding design spaces. Hermus et al. and Sanders argue that using both approaches allows design to better address complex social issues, as each balances the limitations of the other (Hermus et al., 2020, pp. 1, 4, 13; Sanders, 2005, p. 10).

Traditionally, governments have favoured the informational approach to design, which leverages scientific knowledge and methods to develop solutions but often falls short in generating new insights. However, there has been growing interest in the inspirational approach, which aims to include end-user and stakeholder perspectives to gain a deeper understanding of problems and generate innovative, human-centered solutions. This is evidenced by the increased use of design thinking, co-creation, innovation labs, strategic foresight, and ethnography in the federal government (Employment and Social Development Canada Lab, 2020; Innovation, Science and Economic Development, 2017; Policy Horizons, n.d.; Privy Council Office, 2017, 2022), provincial government (Government of Alberta, 2024; Government of British Columbia, 2016; Government of Ontario, 2020), and internationally (Australian Government, n.d.; Bason & Schneider, 2016, pp. 24–34; Centre for Strategic Futures, 2022; Christiansen & Bunt, 2016, p. 53;

Head, 2022, p. 130; Kimbell & Bailey, 2017, p. 215; Mortati et al., 2018, pp. 567–568; OECD, 2017a; United Kingdom Government, 2018, 2022).

The informational approach is data driven and focuses on applying existing information rather than uncovering new perspectives. This can result in solutions that lack user-centeredness and relevance to impacted populations. Additionally, this approach presents empirical evidence to senior management and ministers mostly to gain support rather than create effective solutions. The linear, deductive process provides little opportunity for stakeholder involvement in designing solutions, relying primarily on expert knowledge (Hermus et al., 2020, pp. 4, 8). The term evidence for practitioners includes gray literature, data, peer reviewed articles, what has been done in other jurisdictions or countries, experts or advisory committees' perspectives, and public opinion surveys (Lomas & Brown, 2009, pp. 913–914).

This reliance on the informational approach risks overlooking important contextual factors and end-user needs that could improve policy relevance and effectiveness. Incorporating the inspirational approach allows new avenues to gather fresh insights and increase stakeholder participation.

The inspirational approach is more user-centred, employing abductive logic, which involves forming explanatory hypotheses based on observed surprising facts and selecting the most likely and simplest explanation to guide further investigation (Peirce et al., 1994). This approach, alongside experimental techniques like ethnography, co-

design, and prototyping, allows for a more iterative process. It is focused on uncovering tacit knowledge and co-creating new solutions with stakeholders by continuously generating and refining hypotheses in response to new insights and observations (Hermus et al., 2020, pp. 4, 11).

While focused on incorporating human-centeredness and new insights, the inspirational approach has limitations in process and translation. The exploratory, experimental process is often seen as less rigorous and unpredictable by senior management and policy practitioners compared to the informational approach. Generating ideas through co-design can be difficult to translate into applicable solutions ready for implementation, especially in Canada's federation where responsibilities over many issues are shared between the federal government and 13 provinces/territories or exclusive to them, such as health care and K-12 education, potentially restricting the applicability of co-created solutions across jurisdictions (Government of Canada, 2018). Intensive stakeholder engagement requires substantial time, resources and mechanisms, which may not be feasible in some contexts, such as COVID-19, as well as skills to engage, which are less common among policy practitioners.

The informational approach to design in policy relies on existing codified knowledge, whereas the inspirational approach aligns well with the concept of tacit knowledge, as it values the inclusion of end-user perspectives and experiences. The inspirational approach provides an avenue to tap into this tacit knowledge that could improve the policy design process. As public servants often rely on tacit knowledge in their work,

incorporating it into the policy design can lead to more effective, context-specific solutions (Hermus et al., 2020, p. 9). However, tensions persist between creativity, collaboration, and rigorous, risk-averse processes (Privy Council Office, 2017, 2023, p. 19). The predominance of informational methods for policy design limits participatory practices that could enrich solutions. Therefore, the flexibility and stakeholder involvement of the inspirational approach must be balanced with the need for methodological rigor, efficient translation of ideas, and realistic resource constraints of the informational approach. Though effective for uncovering tacit knowledge, the inspirational approach has downsides in perceived legitimacy, skills, workload, and ability to produce tangible solutions.

Table 1: Comparison of Benefits and Limitations of Design Approaches in Public Policy

Approach	Advantage	Disadvantage
Informational	Based on scientific knowledge and methods, provides reliability and validity	Translate more existing knowledge than produce new knowledge or insights
	Focuses on developing effective, efficient solutions	Can lack user-centeredness and relevance
	Uses deductive logic and analytical methods	Follows a more linear process
	Leverages expert, codified knowledge	Limited stakeholder involvement in solution design
Inspirational	Incorporates user perspectives and knowledge	Perceived as less rigorous by some
	Creates human-centered, responsive solutions	Ambiguous, unpredictable process
	Uses abductive logic and experimental methods	Difficulty translating exploratory ideas into concrete solutions
	Focuses on co-creating solutions with stakeholders	Stakeholder engagement can be resource-intensive and time consuming

Hermus et al.'s informational and inspirational approaches offer a conceptual foundation for analyzing how policy practitioners leverage their tacit knowledge in the design process. The informational approach aligns with traditional evidence-based policy development practices, ensuring rigor and grounding in existing codified knowledge. Complementing this, the inspirational approach emphasizes incorporating user perspectives and generating novel insights, making it well-suited for exploring how practitioners apply experiential tacit knowledge. Together, these approaches provide a comprehensive yet balanced lens - combining scientific objectivity with user-centricity. Their distinct yet complementary natures enable an understanding of how tacit knowledge is applied in the policy development process. Hermus et al.'s framework provides a valuable perspective from which to examine the ways tacit knowledge can drive public sector innovation through policy design.

The informational and inspirational design approaches outlined by Hermus et al. provide a valuable framework for examining how practitioners balance different perspectives and knowledge sources when designing policies. This study will concentrate on analyzing whether, in the context of the COVID-19 pandemic response at PHAC, practitioners were able to achieve a balance between the two design approaches, leverage their tacit knowledge effectively, and what factors enabled or hindered them in doing so.

Concept Definitions

This research focuses on the intersection of design for policy, tacit knowledge, and public innovation. The following concepts definitions will be used to analyze the interviews with policy practitioners who developed pandemic response measures. A literature review was conducted in Chapter 3 to provide a detailed look at previous research.

Tacit Knowledge

For the purpose of this research the concept of tacit knowledge inspired by Polanyi, Nonaka and Tsoukas (Nonaka, 1994, p. 16; Polanyi, 1966, pp. 135–146; Tsoukas, 2005b, p. 3), is defined as knowledge rooted in individual experiences and gained through action and practice in a specific context. This research views tacit knowledge as coming from policy practitioners' accumulated experiences and expertise, making it difficult to capture, translate, or transfer. It is highly personal and context-specific insights developed through practitioners' work within the federal government.

Public Innovation

This research synthesizes the definitions of social innovation by Westley et al. and Murray with Bourgon's concept of public innovation, defining it as the development and implementation processes of novel approaches through government intervention that lead to improved societal outcomes and public value (Bourgon, 2011, p. 16; K. McGowan et al., 2021, p. 61; Murray et al., 2010, p. 3; Westley, 2008, p. 6; Westley et al., 2017, p. 4). This definition highlights the novelty in both the process and the outcomes aimed at achieving meaningful public benefit.

The concepts of design for policy and tacit knowledge are closely linked in their aim to find solutions to real-world challenges and improve the policy development process. Tacit knowledge, which is difficult to articulate explicitly, is essential for effective policy practice. By recognizing the interplay between design approaches and tacit knowledge, practitioners can leverage both approaches of design for policy to create solutions to complex problems.

The concepts of tacit knowledge, and public innovation form the basis for investigating this question. The objectives of this research involve examining the experience of practitioners navigating the policy demands in the context of a crisis, exploring the role of tacit knowledge in designing for policy, and understanding lessons from the crisis response about leveraging practitioners' knowledge that could support public innovation.

Public innovation is essential for addressing complex societal issues and improving services to Canadians. The integration of design approaches and tacit knowledge can foster public innovation by incorporating diverse perspectives, leveraging practical expertise, and encouraging creativity in policy development.

With the research question and conceptual framework having been defined based on the literature review, the next chapter outlines the methodology for carrying out the empirical study. The methodology outlines the steps to gather, analyze, and interpret data. This chapter bridges the conceptual foundations with the practical execution of the research.

Chapter 5 : Methodology

This chapter outlines the methodology used in this qualitative case study to explore how practitioners at the Public Health Agency of Canada (PHAC) applied their tacit knowledge to design policy measures to respond to the COVID-19 pandemic. The case study approach facilitated an in-depth exploration of practitioners' experiences through semi-structured interviews and document analysis.

This chapter is divided into five main sections. The first section provides rationale for selecting a case study at PHAC. Second, details of data collection through interviews are presented. Third, participant backgrounds and roles are described to establish them as knowledgeable sources. Fourth, the approach to interview transcription and analysis

using thematic coding is then outlined. Finally, validity and reliability considerations are presented.

Case Study Approach

A qualitative case study approach was selected to allow for an in-depth exploration of policy practitioners' experiences at PHAC during the pandemic. Case studies can effectively bridge the gap between theory and practice. This methodology facilitates a detailed examination of real-world practices within their specific organizational context. This aligns with notions that case studies explain applications of theory in real-world scenarios (Breslin & Buchanan, 2008, p. 36). Such rich contextual insights may not be feasible through other research methods.

The case study targeted PHAC's COVID-19 response through an in-depth analysis of this prolonged public health event (Rossman et al., 2017, p. 91). It aims to provide insight into how policy practitioners could leverage their tacit knowledge for public innovation. By selecting PHAC as the case organization, the research can explore the unique challenges and opportunities that practitioners encounter in a public health crisis.

Data collection

My status as a federal government policy practitioner and the support of my organization, the Policy Community Partnership Office (PCPO), provided me with an opportunity to work on the government response to the pandemic during a summer 2020 secondment with the Strategic Policy Branch at PHAC. My secondment at PHAC has provided me with context to understand the work of the policy practitioners I interviewed.

Leveraging my professional network and participating in a secondment, I identified practitioners in the EC classification who worked on or had worked on the COVID-19 response at PHAC. I invited them for an interview and used snowball sampling methods to obtain referrals from participants to other practitioners.

Due to safety concerns, participants were still working full-time from home during the interviews. Meeting in person at the office or in a public space in downtown Ottawa or Hull was not ideal, as participants may have felt self-conscious and worried about being overheard and more difficult to hear over a face mask. Microsoft Teams also has a transcription feature that can capture participants' input more easily than notetaking. After careful consideration, videoconferencing was determined to be the best option for the interviews.

Participants gave written and verbal consent to be recorded on videoconference and were invited to turn off their cameras and use initials instead of their full names; they were assured that their names would not be used in publications (See consent form in Appendix A). Participants were not asked to share secret information. It was mentioned to the

participant that if secret information was accidentally shared, it would be deleted and not used in analysis or publication. The research did not collect confidential or private information¹. Participants were informed of their right to withdraw up to 3 months after the interview and were free not to answer questions or leave the videoconference at any time.

Data was collected through semi-structured interviews with practitioners who had worked at PHAC, for a minimum of 6 months, between the start of the pandemic in March 2020 and their interview date in 2022. The interviews aimed not only to uncover insights into their contextual work experience but also to investigate how they applied tacit knowledge towards developing effective policies.

Semi-Structured Interviews

Semi-structured interviews were chosen as the primary data collection method because they provide the flexibility to explore participants' experiences, perspectives, and tacit knowledge. Unlike structured interviews, this approach allows the researcher to probe further into interesting areas that arise during the interview and to gain a richer understanding of the participants' experiences.

¹ The research received an ethics certificate delivered by St. Paul University Research Ethics Board, Certificate 1360.29/21 The researcher successfully completed the Course on Research Ethics based on the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2: CORE 2022), Certificate # 0000786165

Between March and December 2022, six semi-structured interviews were conducted in English with policy analysts and a manager at PHAC at different levels in the EC classification. The interviews lasted between 35 minutes and 1 hour.

Five of the six participants agreed to have their interviews recorded and transcribed using Microsoft Teams software. Notes were taken for one participant who declined to be recorded. The transcripts and notes were analyzed using Ligre, a qualitative data analysis software.

The interviews aimed to uncover examples of tacit knowledge utilization and provide insights into policy practice at PHAC. The interviews also explored the challenges encountered and lessons learned during the COVID-19 pandemic response.

Questionnaire

The purpose of the semi-structured interviews was to delve into the work experience of seasoned practitioners who had worked at PHAC during the pandemic period and to investigate how they applied their tacit knowledge towards policy development. A questionnaire was developed with five topics of discussion: professional background, policy story, policy development context, knowledge and experience, and lessons learned. Questions were open-ended to encourage participants to use their own words to tell a policy story (questionnaire in Appendix B).

The first topic focused on collecting professional background information, such as education and work experience. The second topic aimed to collect participants' policy stories during their time at PHAC, with a focus on COVID-19 response policy development. The third topic investigated the context of policy development during the pandemic period, including participants and stakeholders' roles, constraints, and organizational challenges. The fourth topic explored participants' knowledge and experience in policy development and how they applied it towards designing policies. This included questions about tacit knowledge, and knowledge sharing. Finally, the fifth topic aimed to gather participants' insights and lessons learned during their time working on COVID-19 policy development at PHAC and if they could be applied under a different context.

Participant Background and roles

The educational backgrounds and roles of policy practitioners at PHAC during the COVID-19 pandemic reveal insights into the EC classification requirements and functions of this occupation within the federal public service.

The educational backgrounds of the six study participants aligned with the EC classification requirements in the Government of Canada. All held bachelor's degrees in various fields: commerce, public administration, science, history and two participants in psychology. Four also had master's degrees: in climate change, pharmacy and two in public administration. Of the six public servants interviewed, only one possessed a health-related degree. When the COVID-19 pandemic began, one participant already worked at PHAC, while the other five joined between 2020 and 2022. Their classifications ranged from EC-02 to EC-07, with five as policy analysts and one as a manager. Most were promoted during the pandemic. They worked either in strategic policy or on the Vaccine Rollout Task Force. At the time of the interviews, four participants still worked at PHAC, while two had left for different departments.

The participants have worked on different policy files including economic and social policy, strategic policy, and regulatory affairs in different departments such as: Innovation Science and Economic Development, Employment and Social Development Canada, Treasury Board, Health Canada, Service Canada, and Immigration, Refugees and Citizenship Canada. One person had extensive experience working for international organizations.

The total number of practitioners interviewed was determined by assessing when data collection had reached saturation.

Analysis

This study conducted a thematic analysis of interviews with policy practitioners to assess how they applied their tacit knowledge to design pandemic response measures and identify how that tacit knowledge could be mobilized for public innovation. It also aimed to provide insights into the impacts of the pandemic on PHAC's policy development process.

After conducting interviews with participants, the verbatim transcripts produced by Microsoft Teams were reviewed for accuracy. The transcripts were compared against the audio recordings to ensure integrity and fidelity. Discrepancies between the transcripts and audio recordings were corrected to accurately reflect the interview contents. The handwritten notes taken during the interviews were also transcribed. This multi-step process of reviewing the transcripts, verifying them against the recordings, and incorporating interview notes ensured that the textual data accurately and comprehensively captured the insights shared during the interviews for later analysis.

The transcriptions were then analyzed using a thematic analysis approach. This involved several steps: familiarization with the data, coding interviews, identifying themes, reviewing, and defining themes, and reflexivity.

Initially, the research involved getting familiarized with the data by reading and re-reading the interview transcripts to gain an overall sense of the material. The next step involved coding the data. This process entailed identifying significant portions of the text and assigning them a code that represented the essence of that piece of text. Both inductive (codes emerging from the data) and deductive (codes based on existing theory or literature) coding was performed using a qualitative data analysis software called Ligre. An initial round of open coding identified patterns or "leaves" within the data based on similarities.

After coding, the codes were examined to identify broader patterns or themes. These themes represent key concepts related to the research question and objectives. Further analysis of these codes resulted in the emergence of overarching themes or "branches." Relevant data was then extracted and organized according to each theme.

The identified themes were then reviewed and refined to ensure that they accurately represent the data. Each theme was defined, and its significance to the research question

and objectives was explained. Representative quotes were selected for each theme to illustrate the general tendencies in practitioners' responses. The analysis sought to uncover the role tacit knowledge played in supporting policy work during the pandemic response as well as any changes to practices applicable to support public innovation.

Throughout the data collection and analysis process, reflexivity was practiced. This involved being aware of the potential influence of the researcher's own perspectives and experiences on the data collection and interpretation process and taking steps to mitigate this influence.

By taking a thematic approach to systematically coding, analyzing, and interpreting the interview data, this study sought to gain a nuanced understanding of policy practitioners' experiences leveraging tacit knowledge.

Interview Quotations

Quotations attributed to interview participants have been minimally edited for clarity, concision, and readability. In the interest of ease of reading, some pauses, repetitions, digressions, and filler words have been removed. Efforts have been made to preserve participants' accurate meaning and key ideas. Where necessary, clarifying terms have been added within square brackets.

Validity and Reliability

To maintain the validity and reliability of case study findings and enhance the credibility of the research, I engaged in peer debriefing to ensure reflexivity and utilized a coding tree to ensure consistency in data analysis.

The decision not to use secondary sources, such as auditor general reports, in this study was driven by the fact that these sources do not capture the nuances and intricacies of policy practice. While auditor general reports provide valuable insights into the overall governance and effectiveness of government policies, they focus on outcomes and compliance rather than the day-to-day activities of policy practitioners. By relying solely on primary data collected through interviews with practitioners at PHAC, this study ensures a direct and in-depth examination of their experiences, perspectives, and tacit knowledge in policy development during the COVID-19 pandemic.

Insider-Researcher Positionality

There are both advantages and disadvantages to being an insider-researcher, which involves studying a group to which one belongs. Advantages include a greater understanding of the culture, being able to speak the same language, quickly establishing a rapport with participants and being familiar with the politics of the institution. However, there are also disadvantages such as having to balance two roles, bias, and assuming

the meanings of situations rather than seeking clarification (Unluer, 2012, pp. 1, 2, 6). I did not have to balance dual roles as my position of policy practitioner during the data collection phase was not related to my academic research, but I still took steps to address potential bias by discussing my findings with individuals who were not policy practitioners. Additionally, to avoid assuming meaning, I paraphrased participants' answers.

With the qualitative case study methodology outlined, this next chapter presents the results of data collection and analysis. The chapter follows a structure aligned with the research question, key themes are summarized, drawing from interview quotes and documentary data to substantiate the interpretations. The presentation of results follows the thematic analysis process described in the methodology. In addition to outlining the main findings, this chapter also notes where results confirm or diverge from the conceptual framework and existing literature. The results chapter forms the basis for analysis and discussion of how the findings advance knowledge.

Chapter 6 : Results

This chapter explores how policy practitioners at the Public Health Agency of Canada (PHAC) applied their tacit knowledge to develop policy measures in response to the impact of COVID-19. It examines policy practitioners' roles, responsibilities, and outputs during the pandemic, while also examining the challenges they faced in rapidly designing policies with limited information. Additionally, the chapter aims to understand the lessons learned from the usage of tacit knowledge that could support public innovation.

The chapter presents interview findings from six practitioners at PHAC, providing insights into their experiences and offers an understanding of the policy development process within the context of a crisis. By analyzing and contextualizing the interview findings, the chapter effectively addresses the research objectives and contributes to a better understanding of policy practice during a health crisis.

Roles and Responsibilities

The policy practitioners interviewed assumed various roles to address the complex demands presented by the evolving pandemic response. This section explores the diverse roles and responsibilities described by the participants; by examining their experiences, we gain valuable insights into the specific functions performed by these individuals, which encompassed budget review, policy support, coordination, and engagement with a wide range of stakeholders. These insights not only highlight the collaborative nature of the response efforts but also underscore the diverse contributions made by participants in addressing the multifaceted challenges posed by the pandemic. Through their collective efforts, these practitioners played a crucial role in addressing the challenges of the pandemic response and working towards developing effective policy measures.

Participant T explained,

"My role was really to review the budget proposals coming forward. And then put forward recommendations in terms of what we thought had the greatest alignment in terms of the mandate priorities of the government, based on lessons learned throughout the pandemic that we were seeing from various evaluations, reviews, and also to go back to programs as well to sometimes get clarification on items or get additional feedback."

Participant U recalled, "Supporting off-cycle funding submissions, budget processes, medium-term policy, supporting transition of new Deputy Minister and Minister, and horizontal coordination function. "

K stated, "I contributed to budget and FES [Fall Economic Statement] proposals and submissions. I contributed to the research and renewal of the PHAC."

Participant T noted,

"We do need to work with other government departments as well as, provincial, territorial and indigenous organizations, because we do work with in the public health space, a lot of health matters are also under PT [provinces and territories] jurisdiction. So just to make sure that we're covering our bases and engaging with all key stakeholders there."

Participants indicated that many of their roles and responsibilities as policy practitioners at PHAC aligned with those described in the literature for their occupation. They noted similarities, such as conducting research, analyzing, and synthesizing information, consulting stakeholders, and making recommendations. The crisis did not change the nature of their roles and responsibilities.

Outputs and Products

Participants also drafted similar outputs and products, including briefing notes, presentations, speaking points, strategic plans, Memoranda to Cabinet, Treasury Board submissions, and Budget proposals.

As participant N recalled, "My role was largely in drafting the [2022 and Beyond Vaccine] Strategy."

Participant F explained,

"I brought a lot of stuff together in one [environmental] scan and it was 5 pages weekly. I often took the data that I got a step further in terms of the granularity of analysis, but also linking developments between various areas, for example, epidemiology and borders, or epidemiology [and] public health measures. It was really fact based, a lot of quantitative stuff. [...] I also began [...] to develop [...] a summary of the key trends or policy considerations."

Participant T stated,

"As a senior policy advisor, within our team, we work a lot on coordination and oversight of the budget process within PHAC; reviewing budget submissions, sometimes helping out with TB Subs [Treasury Board Submissions], MCs [Memoranda to Cabinet]."

Participants undertook traditional policy practitioner roles and responsibilities, including analyzing information, researching issues, consulting stakeholders, and making recommendations to decision-makers. Outputs, such as budget submissions, environmental scans and presentations are consistent with usual deliverables. The insights from these participants demonstrate how the roles, and responsibilities as well as outputs in this policy context of crisis are typical of policy development processes.

Challenges

The rapid pace of policy development posed significant challenges for practitioners during the COVID-19 pandemic. Immediate timelines, the need to make progress despite time constraints, and the lack of complete information, uncertainty as well as lack/loss of institutional knowledge were key factors that impacted their work. Despite these challenges, practitioners demonstrated an ability to adjust quickly to this new working environment.

Rapid Pace of Policy Development

Practitioners worked in an unusual context characterized by the fast pace of policy development, immediate deadlines, and the need to advance despite information gaps and the rapid pace of approvals that is atypical for government, all of which presented challenges but also facilitated progress during the crisis.

Immediate Timelines

Participant S compared timelines before and during COVID-19,

"I mean, so much of the policy work I was doing previously was on two-year timelines, five-year timelines and you really got to take a lot of time. And you do a lot of research, a lot of international scans, a lot of figuring out best practices. So a lot of the kind of things that I had relied on as kind of the way to develop policy wasn't there since we were dealing on such short timelines. Despite the fact that we are in a global pandemic and there's an inherent urgency in that, there's also the fact that we're dealing with vaccines and vaccines shelf lives. So there's an automatic clock on everything and it very rarely with runs longer than six months."

Participant N explained,

"Decisions were moving at the speed of light. Things were happening overnight. Again it's not something that the government is used to, moving that quickly. [...] we got it done and all of the people behind the scenes who were inputting things

into the system and getting the approvals necessary, it all happened quite smoothly.”

Progress Despite Challenges of Speed

While the accelerated pace of policy development during the pandemic response created challenges, participants provided insights into how progress was still made.

Participant U stated, “Things are moving faster. There is a sense of urgency, as well as competition with other countries over the same resources, factor in uncertainty in decision-making. Central agencies [Privy Council Office, Treasury Board Secretariat, and Finance Canada] are more flexible in certain situations. Still for rush decisions, the PM [Prime Minister] is involved.”

U added later, “Things have cooled down for a little bit. The pace was brutal. People left. I am looking for stability.”

Participant K talked of the pressure to deliver,

“The day that I started at PHAC, was the day that budget proposals were due to Finance Canada for the fall economic statement. I ended up working a very, very long day and I didn't actually do my mandatory training until months and months later [...] I don't know if it's different now, but when I joined, it was kind of pushed

to the side because there was such a high need for resources. There was such a high need for more help for more people to come in and to push products and to provide recommendations.”

Despite the time constraints imposed by the urgent nature of the pandemic response, most participants indicated they were still able to make progress, albeit at a rapid pace. Central agencies demonstrated flexibility that facilitated faster decision-making. The insights provide perspective on the pressure posed by rushed timelines and opportunities that may be carried forward once crisis conditions diminish.

The unprecedented uncertainty, lack of complete information, changing evidence landscape, and scarcity of relevant institutional knowledge presented major hurdles for policy practitioners responding to the novel pandemic situation. Agility and rapidly adapting to new information inputs became essential to navigate the fluid environment.

Tacit Knowledge

Though not referring directly to tacit knowledge, participants described leveraging their broad experience and intuition when explicit knowledge was unavailable. Their accounts illustrate the significance of tacit knowledge and relationships in working quickly during unforeseen crises. Despite the obstacles of urgency, uncertainty, and a lack of

institutional knowledge, participants were able to address unique policy challenges by relying on their tacit knowledge.

Participant N was the most explicit about using their tacit knowledge, relying on past policy experience they mentioned:

“I understood the different components despite the fact that it was a completely different subject matter than anything I had worked on. Even so far as like, not just that it was health policy, which I didn't have experience with. It had to do with procurement, which is also something I didn't have experience with, so the subject matter I did not know. But when it comes to your basics of policy development and what information considerations need to go into a strategy, that I was pretty comfortable with.”

They added,

"[...] the main challenge being we didn't know. We didn't have any information, so it was a lot of filling in the blanks and using logic and reasoning and those type of rationales to kind of help put something together that made sense."

Participant K explained using knowledge acquired in a different context without knowing exactly where it came from,

"Because some of the work Implicated in discussion with other branches weren't things that I would have learned, like in my position as an EC-02 at the time, those weren't things that I had learned. In fact, those were things that I had

learned, and maybe and I say maybe, when I was doing my master's degree, maybe from academia in that sense, and how to ask questions in a specific way and how to be able to bring out key points and discussion, and also how to try to reach a consensus in a collaborative effort, I think, [there] were areas that I hadn't learned from PHAC but were important while I was there."

Participant F, didn't think they used knowledge acquired outside PHAC but as they were speaking, they remembered past experiences,

"I'm inclined to think not [about relying on knowledge and experience gained outside job at PHAC] because it was a total new area for me, I really had to explore different universe because I do not have a public health background. Except for the fact that, I've reviewed proposals in public health for the [international organization], but COVID was a new area. Well, that's not entirely true, by the way, before I joined, now that I talk about it, I did an assignment for the [international organization], which was about the social economic impact of the response to the public health response to COVID, domestic violence and that kind of stuff."

As participant S noted acquiring knowledge through practice,

"I came into this role with absolutely zero background in health or public health policy, so it was already very unfamiliar territory. But after a few months you get

to understand how things work a little bit better, and it becomes a little bit more natural."

A participant K described relying on past experience and learning through practice,

"I had had exposure to because they're common across many organizations. For example, a Treasury Board submission or an MC or a briefing note. There is a standard structure that you follow anywhere that you are, and so perhaps the template differs slightly. It's the same kind of information that you're seeking but when it comes to [...] mak[ing] recommendations for the COVID response, that was an area that was completely brand new to me and so I felt like I was learning as I was going. There were areas, like speaking to other branches that I felt like I was a bit prepared just through having exposure through other jobs, but in that recommendation making process and in the high priority of those recommendations, I think it was something that was brand new to me."

Participant T described how they drew on past knowledge of where to find resources, and how to leverage existing policies/programs,

"I think from previous positions just being able to, you know, prioritize and manage expectations with what's really important. Also just knowing maybe even where to go and resources. I think from previous positions is helpful to advance things also like just working with certain other programs, I think a lot of folks also just relied on you know what? What has worked, I guess, in the past or tried to

leverage some existing policy, policies and programs and, maybe leverage some of that and update for what their needs were."

Participant U mentioned the importance of building relationships to find information quickly,

"Definitely when it comes to developing rapid fire funding submission, relationships are even more important. In my role, I don't have all the answers. I need to get them from others. In general, communication of approaches, vision, in order to help set the scope and potentially move forward are important as well."

The interviews revealed that tacit knowledge, gained through experience, was essential for policy practitioners at PHAC to tackle novel issues posed by the COVID-19 pandemic. Participants described drawing on past policy and work experiences, knowledge from education, intuition, and relationships when explicit information was limited. This demonstrated adaptability by applying tacit knowledge from different contexts. By relying on their expertise and judgment, participants could advance policy despite speed pressures, uncertainty, and loss of institutional knowledge.

Intuition

Several participants spoke of relying on intuition to do their work.

Interviewee T revealed developing an intuitive sense of what senior management wants,

"[...] as you become a bit more familiar with sort of what our senior management is looking for and sort of how they think, it gets a little bit easy. I don't wanna say easier but it's it makes it a bit easier to do the job because you get a better sense of what it is that they're looking for and what's more, I guess, more likely to move forward."

Participant F stated "I always rely on my intuition as well in terms of the bigger picture and how things work because that is that is a bit who I am."

Participant S said,

"I don't have to rely exclusively on my intuition, and we work on an exceptionally collaborative team which is really great. You don't do really any of your work in a bubble. Everything that I produce, I have my coworkers look at before sending up and it's very, very collaborative and I think that adds a lot to my experience and it's really helped me kind of honed intuition a little bit more as I learn from others."

K noted,

"I think through working in that environment for a whole year, I was able to, maybe, use intuition to make like split-second decisions when there was

pressure from senior management to produce something or to answer a question. And so I think I would use my intuition to determine how to respond to requests or to how to respond to questions in a way that would give the answer that was needed, but stay true to the data and so I think there was a lot of intuition involved, but I also think, perhaps it, it might have also been a bit of experience, a little bit. And though I still consider myself a junior employee, I think so. I think there was a lot of intuition, maybe, maybe a little bit of experience.”

Articulation

Tacit knowledge played an indispensable role in policy development during the unpredictability of the COVID-19 pandemic; however it is by nature difficult to capture in words.

As participant N explained the process of putting their knowledge on paper,

“I could probably do a pretty good guide with the caveat that it's a very complicated process. And it's very interconnected, which I think would make it probably better for a telling, just because otherwise it would be a 300-page document.”

Participant S mentioned missing subtlety, “Probably there is a lot of nuances and I think that would get lost when you don't have the ability to kind of provide the colour commentary.”

Whereas participant T noted the need to update the information,

"I definitely think like even if I'm able to maybe write out the process which might be helpful, there would probably be like ongoing work in terms of updating who to connect with, or the resources."

N talked about having to trust themselves,

"It wasn't quite that quick, but it moved quickly. And so you really kind of had to trust yourself that the things you were putting in there made sense, which I will admit, at the time, I was a lot less comfortable with."

Though participants did not explicitly refer to tacit knowledge, their accounts reflect key aspects of this concept. They described relying on knowledge and intuition acquired through experience and practice in different contexts. While participants believed they could document their knowledge through writing, they also recognized the challenges associated with fully capturing the nuances and interconnectedness of their knowledge. The findings differ slightly from the existing literature, which suggests that tacit knowledge is inherently difficult to articulate. Instead, the participants' experiences highlight the complexity and dynamic nature of tacit knowledge, emphasizing the need for ongoing updates and the recognition that some aspects of tacit knowledge may be more effectively conveyed through verbal communication. Participants are policy generalists by education, but they build specialized knowledge and insight into their work through on-the-job experience, highlighting the importance of tacit knowledge for policy practitioners.

The findings demonstrate the significance of tacit knowledge for policy practitioners during the COVID-19 pandemic. Despite lacking experience with pandemic response, participants were able to adapt by drawing on tacit knowledge built from past experiences, education, and intuition. Tacit knowledge allowed participants to tackle novel policy issues despite the challenges of speed, uncertainty, and the loss of institutional knowledge.

Opportunities

While the context of the pandemic was extremely challenging due to the urgent and evolving nature of the pandemic, some participants noted that certain changes did bring about positive outcomes for policy practice. Specifically, the crisis prompted an increased level of exposure to senior management and witnessing of executive decision-making processes compared to regular policy work. Additionally, participants observed that the pandemic fostered more efficient collaboration both within PHAC, as well as across government departments. Despite the immense challenges of operating within an emergency response environment, certain adjustments to policy practice and decision-making processes during this time could be paving the way for long term changes to the policy development process going forward.

Interaction with Senior Management

The experiences shared by the participants highlight the crucial role of transparency, open communication, and equal access to information in effectively responding to the challenges posed by the COVID-19 crisis. The virtual environment facilitated inclusive discussions, enabling agile decision-making and fostering collaboration within PHAC and across government and other stakeholders.

Participant N reflected on working with executives who showed a high level of transparency and fostered open communication,

"I was also fortunate to work for executives who were incredibly transparent. We had daily touch bases, every morning, and again that was a product of the fact that things were moving so quickly, and so we needed to have a touch base every day to kind of set out the priorities for the day. We often used those touch bases, and still do, because, we still do have daily touch bases, to work things through like oftentimes they're brainstorming sessions where we almost set policy on the fly. As we have these open discussions and it's great because it's everybody, not just the executives, it's all the way down to our EC-02s who can participate in these types of discussions. My executives were very open to everybody at all levels attending meetings. It's one of the benefits of the virtual environment is that it's easy to sneak into the background of a team. And my DG and ADM are both very open to that and allowing people like even up to the president's level if there's a meeting with the President and it's related to your file,

you are in, and if you don't listen in, you still get a debrief of what happened at that meeting. "

Participant N mentioned that inclusive discussion improves the quality of their work,

"Well, and that's why it's absolutely invaluable and I think it's one of those things that, you know, even going back to the days of when we were in the office, I think there's always been this recognition that the more you trickle down information in, the more you feed out information and debrief, people at all levels, the better you are at your job because, you know that information then helps to feed the products that you were developing and the policies you were making and not having access that information means that now it relies on the executives to have to fill in those blanks, and that just adds to the process. So it's a lot easier if just everybody has access to the same information. And I think there's always been a recognition of that, but it's a lot more difficult to achieve in person 'cause, you can't take a team of, you know, like 12 people to every meeting, which is why in the virtual world it's a lot easier 'cause you can have meetings with 40-50 people all listening in and having access to that information. And so it's been absolutely invaluable, particularly related to COVID-19, because COVID-19 is a file that is very singular [...] it's incredibly interconnected. There's so many different components of it, from start to finish, like, even on vaccines, you know, we have different files, but they all blend into one another."

Participant K provided an example of bypassing the hierarchy,

“In PHAC or, at least in my position in PHAC, I had much more exposure to senior management and, I think part of it comes from the immediacy and the high priority of the files that you're working on. I think sometimes, in PHAC, you would just skip through the hierarchy because you had information and someone needed it, and they needed it right now.”

The insights underscore the significance of creating an environment that promotes transparency, inclusive discussions, and equal access to information as it leads to more effective policy development in times of crisis.

This section explores the experiences shared by the participants regarding their exposure to the decision-making process during the COVID-19 pandemic. Participants reflected on the challenges and opportunities they encountered while working closely with decision-makers at senior levels.

Participant N provided an illustrative example,

"It was challenging and frustrating sometimes trying to bring a decision to decision-makers. Where we would present information, make a recommendation, we would be told we needed a decision, yes, agree, we need a decision, and then nobody wanted to make the decision. And then, well, we would bring it back. It was kind of like this weird, like some decisions that had to be made were made very quickly, other decisions, there was this weird fear of making the wrong

decision, so they made no decision. The thought process and the decision-making process at the highest level we got to see it in action very closely and it was equal parts, fascinating as it was frustrating because there are certain considerations that come into play at that level that are not necessarily strictly policy and evidence based."

Participant S mentioned that the virtual environment offers advantages in terms of direct access to senior management,

"Being an analyst, I found when we worked in the real world that getting invited to a lot of those meetings was difficult because you were a physical body in a boardroom. There's something about the virtual environment where I'm just a bubble on the screen that I don't seem to get noticed as much, and it's great to get information directly from the source without having to wait for a readout or someone's interpretation of a readout that they saw and then try to do your job according onto that. It's nice to get the information directly from the source, and in certain occasions being to actively participate in meetings and ask the questions that you have, when you have the questions."

Participant K also mentioned increased exposure to decision-making compared to previous roles,

"In terms of decisions about an initiative or a project, I think I did have more exposure to the decision-making process [than previous roles] and because I remember, in PHAC, we were just in back-to-back meetings all day and we

would hear our management making those decisions in the meeting and we would just be listening. I think previously when I was in an office environment, when I was in an in person office environment, I think that you would have a discussion as a team on a project and then I felt like management would then have a separate discussion to make decisions concerning the future of the project and the approach and I think, given the crisis operations of PHAC and just the time constraints on everything and those that decision making was just made.”

Participants illustrated the increased exposure to senior management and the impact on decision-making and policy development during the COVID-19 pandemic. Participants described a shift in the traditional hierarchical structures, with the urgency and high priority of the crisis necessitating direct access to senior management and bypassing the usual hierarchy. The immediacy of information and the need for immediate action allowed for a more transparent decision-making process.

Collaboration

Collaboration plays a pivotal role in effective governance, particularly in times of crises such as the COVID-19 pandemic. The following interview quotes shed light on the significance of collaboration within and across multiple departments and agencies. Participants highlighted the need to work together, share information, and break down silos to navigate the complex challenges posed by the pandemic.

Participant U talked about working with people within PHAC and with central agencies, “We are trying to get information from other areas. We are not the subject-matter experts. We had to brief central agencies, so they understood issues. They had a lot of comments, we needed to explain the rationale.”

Participant F spoke of working with different teams across PHAC,

“Within PHAC initially, data available within the Directorate, and I expanded that beyond the directorate to include all sorts of specialized teams: borders, epidemiology, public health measures, vaccines, testing, tracing. After a while the scan became richer and richer because I was looking beyond the silos, and collaborating with these people.”

Participant S provided an example of working with a different department for implementation,

"From the GAC [Global Affairs Canada] side, they have a health group essentially that they work with, very specifically a COVID task force on the GAC side, and they are the ones who have taken over the kind of dose donation space, and they're the ones that we collaborate very closely with in terms of finding homes for doses."

Participant T, talked about working with different stakeholders,

“Sometimes we do need to work with other government departments, as well as provincial, territorial and indigenous organizations because we do work within the public health space, a lot of health matters are also under PT [provincial and territorial] jurisdiction.”

Participant N provided an example of how unusually different it was working collaboratively across departments and breaking down siloes,

“I have done collaborative initiatives across departments, and it has always been painful, talk about silos and the idea of silos and this weird hoarding of information where people don't like to share information with other departments, other teams. It was very rewarding to see that when it came to COVID-19 and again, I'm sure it's a product of the fact that this file didn't exist before, so it didn't really belong to anybody. It just was a lot more natural for us to kind of come together as a government versus individual departments. But it was very fascinating the way that I work in my everyday work, I reach out pretty much every day to somebody from another department, that has just become a routine part of the way that we do our work, and it's easy. I'm working on a product right now that is basically being drafted by four departments.”

Participant S also compared collaboration with past experiences,

“I think we've shown how important collaboration is and just how far collaboration can push us when you're not dealing with things where you're sending requests

to departments and waiting several weeks to hear back. But all the department DMs [Deputy Ministers] are hopping on a single call to hammer things out there. It's amazing what can be done when it needs to be.”

Collaboration was evident in various aspects of the pandemic response. Participants described working with central agencies to ensure a shared understanding of issues and incorporate their input into decision-making processes. Collaboration extended beyond individual departments, with participants actively reaching out to colleagues from other departments to share information and work on joint initiatives/products. Participants also highlighted that deputy ministers from different departments were debating issues and making decisions collaboratively.

Flexibility

This section examines the theme of flexibility within the context of the exceptional circumstances experienced during the crisis. Several participants provided insights on the subject.

Participant U said, “Central agencies are more flexible in certain situations.”

Participant S added, “There's definitely some latitude just because we are dealing in a space where there hasn't been a lot of process.”

Participant N noted that the flexibility adopted during the crisis period is now undergoing scrutiny,

“People were really flexible and bending things when there was a good acceptance of [the situation]. It's something we are now paying for two years later where we are going through an audit right now.”

The theme of flexibility emerged as an important factor in the crisis response. The agility demonstrated by central agencies and the latitude afforded by the lack of established processes played a significant role in navigating the unprecedented situation. However, this flexibility comes with its own set of issues; as Participant N points out, the subsequent oversight, such as audits, highlights the impacts of such flexibility due to the typically rigid nature of government processes.

This results chapter addressed the research question by providing valuable insights into the application of tacit knowledge by practitioners in the design of policy measures to address the impact of COVID-19 at PHAC. The chapter explored the roles and responsibilities, highlighting practitioners' involvement in analyzing information, providing advice, and coordinating with stakeholders across government departments. It also identified the outputs drafted by the participants, such as briefing notes, presentations, and budget proposals. Despite the challenges posed by the fast-paced environment, the crisis demonstrated that bureaucratic barriers can be overcome by increased exposure to senior management, as well as a collaborative and flexible environment.

The chapter revealed, through participant's experience, the specific challenges faced in rapidly designing policies for an unprecedented health crisis with limited information. The interviews provided valuable insights into how practitioners relied heavily on tacit knowledge, acquired through on-the-job experience, education, and intuition, to address the complex challenges posed by the crisis.

Moreover, the chapter highlighted the positive outcomes that emerged from the crisis context, such as increased exposure to senior management, and a more collaborative and flexible approach to policy development. Participants reported closer collaboration within and across departments, breaking down silos, and sharing information to address the multifaceted challenges of the pandemic.

After presenting the key findings derived from the interviews in the previous chapter, the discussion chapter undertakes an analysis of the findings' significance. It interprets how the results address the research question, explores their implications, and outlines any limitations that may exist. The chapter highlights the meaning and importance of the results, particularly in relation to the literature on tacit knowledge, design for policy, and public innovation. Moreover, the chapter offers concrete recommendations and suggests future avenues for research and practice based on the study's contributions.

Chapter 7 : Discussion

The previous chapter presented the research findings; building on this, the discussion will summarize the key points by revisiting the research objectives, and insights from findings will be compared to existing literature on policy practitioners to assess similarities and differences in this crisis context. Limitations of the study are also acknowledged. The chapter offers concrete recommendations and suggests future directions for research based on the study's contributions to research and practice.

Design Approaches

Results from interviews contributed to the first research objective to examine the experiences of policy practitioners in navigating the demands of urgently designing pandemic policies in a fast-paced environment. Understanding the design approaches they employed sheds light on how they navigate the complex challenges of policy development, particularly in times of crisis.

Interview participants did not utter the word design but they definitely designed policy according to Simon's definition as 'course of action aimed at changing existing situations into preferred ones' (Simon, 1988, p. 67).

The interview results reveal that the actions taken by practitioners are designed to transform current circumstances into desired outcomes. They achieved this by evaluating budget proposals, recommending the allocation of resources to areas in need, and improving the government's response to the pandemic (Participants K, T and U). In addition, they engaged key stakeholders to ensure that diverse perspectives and expertise are considered in the policy development process, leading to policies that better address the complexity of the public health crisis (Participants S and T). They formulated strategies, analyzed data, and identified policy considerations to design a structured path to transition from an unmanaged crisis to a managed response (Participants F and N).

Each of these actions represents a response designed to modify the existing circumstances into preferred outcomes, such as more informed budget allocation, improved public health response, and better pandemic management. This aligns with Simon's definition of design as a deliberate course of action to change existing situations into preferred ones.

A closer look at the interplay between the informational and inspirational approaches provides insights into how practitioners balance the use of existing knowledge and evidence with the generation of novel ideas and the integration of diverse perspectives in the policy development process.

The informational and inspirational approaches from Hermus et al. provide an analytical framework for understanding how policy practitioners applied their tacit knowledge during

the COVID-19 pandemic. The informational approach highlights how practitioners balanced applying their tacit insights with using existing codified knowledge, scientific evidence, and analytical methods. Concurrently, the inspirational approach guides the analysis of instances where practitioners relied on intuition, experience, and contextual understanding to navigate complex challenges - generating novel solutions, adapting strategies, and making decisions amidst uncertainty by drawing on tacit knowledge.

Despite not describing their activities as design, participants have demonstrated they used both the informational and inspirational approaches to design as per the conceptual framework. Participants more often used the informational approach, by translating knowledge to create policy measures to address COVID-19, than the inspirational approach, which is consistent with the literature (Hermus et al., 2020, p. 15; Sanders, 2005, p. 9).

The results reveal the experiences of practitioners working under time pressures and uncertainty as they rapidly developed policy responses to the COVID-19 pandemic. The lack of information, unknowns, and missing data posed significant challenges for decision-making. Although literature hasn't yet explored the impact of the pandemic on design in the context of policy, findings support Dryzek's notion (Dryzek, 1983) that the complexity and uncertainty of the situation, the evolving nature of the pandemic, and the need to adapt to changing direction and priorities are important factors that influence design approaches. Additionally, the lack and loss of institutional knowledge further

added to the challenges faced by practitioners. However, the findings also demonstrate their agility and adaptability despite the difficult circumstances.

"A lot of things are going on in real time. They are politically sensitive, evidence is changing, always new variants. Submission involved third parties. [...] There are a lot of unknowns, a lot of interlinkages with cross-cutting parties. There are ramifications to other areas. There is a need to balance preparedness with response. If something happens, we need to ramp up quickly." This quote from Participant U reflects the necessity for design to be adaptable and responsive, which aligns with the inspirational approach. The ability to quickly incorporate new evidence and adjust policies is a fundamental aspect of effective design practice in uncertain and rapidly evolving contexts.

Participants gathered research and analyzed quantitative data to understand issues, and used logic and reasoning to make sound recommendations as per the informational approach.

"I brought a lot of stuff together in one [environmental] scan [...]. I often took the data that I got a step further in terms of the granularity of analysis, but also linking developments between various areas, for example, epidemiology and borders, or epidemiology [and] public health measures. It was really fact based, a lot of quantitative stuff." This quote from Participant F demonstrates the informational approach to design, where quantitative data and research inform policy design. It highlights a reliance on empirical evidence to inform policy design, which is a key characteristic of the informational approach.

When facing a lack of data or knowledge, practitioners explored the inspirational approach by relying on their tacit knowledge encompassing their practice, experience, and intuition. They gained deeper insight into problems through open and transparent communication with senior management and increased collaboration within PHAC and across different departments. They also demonstrated the ability to adapt quickly by incorporating new evidence that became available over the course of the pandemic, learning from other countries, and generating new knowledge in response to real-world changes, which has also been found in the literature on the pandemic (Nair & Garg, 2024, p. 5). Practitioners' ability to adapt quickly by incorporating new evidence, learning from other countries, and generating new knowledge in response to real-world changes demonstrates the inspirational approach's iterative and responsive nature. By being open to new information and actively seeking relevant information from various sources, practitioners could refine their understanding of the situation and develop more effective solutions.

"We do need to work with other government departments as well as, provincial, territorial and indigenous organizations, because we do work with in the public health space, a lot of health matters are also under PT [provinces and territories] jurisdiction. So just to make sure that we're covering our bases and engaging with all key stakeholders there." The quote from Participant T shows collaboration with a wide range of stakeholders, which is a characteristic of the inspirational approach. It ensures that policy is informed by various perspectives, especially in complex fields like public health, where there are jurisdictional

overlaps, aligning with the inspirational approach's emphasis on incorporating diverse viewpoints.

"I do think things did move faster, especially during the peak, but I do also feel like there was quite a bit of change in direction. There is a lot of interest in it [sic] and so I think different people providing their input would often, I wouldn't say completely changed the course of things, but I think it would influence the work quite a bit." . Participant T captures a policy development context where knowledge is complemented by a broader range of perspectives, leading to policies that are not only evidence-based but also reflective of the complex, changing realities faced during the pandemic. This aligns with the inspirational approach's focus on generating novel insights through the incorporation of diverse viewpoints.

"I was also fortunate to work for executives who were incredibly transparent. We had daily touch bases, every morning, and again that was a product of the fact that things were moving so quickly, and so we needed to have a touch base every day to kind of set out the priorities for the day. We often used those touch bases, and still do, because, we still do have daily touch bases, to work things through like oftentimes they're brainstorming sessions where we almost set policy on the fly. As we have these open discussions and it's great because it's everybody, not just the executives, it's all the way down to our EC-02s who can participate in these types of discussions."

This quote from Participant N suggests an environment where practitioners are not just receivers of top-down directives but are engaged in a dialogue that can shape policy direction, representing the iterative and responsive nature of the inspirational approach. It highlights the importance of open communication and the inclusion of diverse perspectives in the policy design process.

The different examples of informational and inspirational approaches align with existing literature that highlights the importance of striking a balance between existing and new knowledge in policy development (Hermus et al., 2020; Sanders, 2005, p. 10). These findings demonstrate that during the pandemic, policy practitioners at PHAC employed both informational and inspirational approaches to navigate the challenges of designing policies in a complex and rapidly evolving context. The informational approach provided a foundation of empirical evidence and analytical methods, while the inspirational approach enabled practitioners to generate novel insights, adapt to changing circumstances, and incorporate diverse perspectives. By leveraging both approaches, practitioners could develop more effective and responsive policies to address the multifaceted challenges posed by the COVID-19 crisis.

Tacit Knowledge

The findings of this study help address gaps identified in the literature review regarding the second research objective, which was to explore how practitioners at PHAC applied their tacit knowledge to develop policy responses to the evolving COVID-19 pandemic.

As the review highlighted, there is limited research exploring the experiences and practices of working-level policy practitioners, with existing studies primarily focused on senior management and external stakeholders (Baskoy et al., 2011; Béland, 2009; Rinfret et al., 2010; Zussman, 2013). This study fills this gap by providing insights directly from practitioners at PHAC, capturing their perspectives and experiences during the COVID-19 crisis.

Given the unprecedented nature of the pandemic, policy practitioners at PHAC found themselves in uncharted territory. Participants considered themselves generalists, as supported by literature (G. Anderson, 1996); they have knowledge of various policy areas, and none had prior expertise in designing pandemic response measures. However, they demonstrated comfort in navigating uncertainty, and have a strong sense of what is relevant for decision-making. Despite lacking specific expertise in pandemic response, participants drew on their broader policy knowledge and understanding of the policy development context and process to design policy measures, as demonstrated by the following examples.

The following example, provided by Participant N, brings to light the intuitive grasp of policy development despite being new to the specific subject areas:

“I understood the different components despite the fact that it was a completely different subject matter than anything I had worked on. Even so far as like, not just that it was health policy, which I didn't have experience with. It had to do with procurement, which is also something I didn't have experience with, so the subject matter I did not know. But when it comes to your basics of policy development and what information considerations need to go into a strategy, that I was pretty comfortable with.”

The participant's response illustrates tacit knowledge by highlighting their intuitive understanding, transferability of skills, comfort with the process, and unspoken expertise in policy development. These characteristics demonstrate the participant's ability to draw upon their accumulated experience and ingrained understanding to effectively navigate novel policy challenges, even in the absence of direct subject matter expertise.

This illustrates reliance on tacit knowledge, particularly in collaborative settings and discussions, which are not easily codified. Participant K said:

"Because some of the work implicated in discussion with other branches weren't things that I would have learned like in my position as an EC-02 at the time, those weren't things that I had learned. In fact, those were things that I had learned, and maybe and I say maybe, when I was doing my master's degree, maybe from academia in that sense, and how to ask questions in a specific way and how to be able to bring out key points and discussion, and also how to try to

reach a consensus in a collaborative effort, I think, [there] were areas that I hadn't learned from PHAC but were important while I was there."

The skills mentioned, such as framing questions, identifying critical points in discussions, and fostering consensus, indicate tacit knowledge. These complex interpersonal and analytical skills are honed through experience rather than formal instruction.

The following illustrates the process of internalizing new knowledge and gaining comfort with unfamiliar policy areas. "I came into this role with absolutely zero background in health or public health policy, so it was already very unfamiliar territory. But after a few months you get to understand how things work a little bit better, and it becomes a little bit more natural." This insight from Participant S demonstrates a transition from unfamiliarity to competence, which is characteristic of tacit knowledge acquisition. Through immersion in the field, the participant developed an intuitive understanding of public health policy.

The participant's statement, "But after a few months you get to understand how things work a little bit better and it becomes a little bit more natural," is an indication of the development and utilization of tacit knowledge in the context of public health policy. The expression "a little bit more natural" suggests that the participant has internalized their understanding of the policy file to the point where it has become an intuitive part of their knowledge. Their initial lack of background in health or public health policy meant that they started in unfamiliar territory. However, through immersion in the field and hands-on experience over several months, they gradually developed a more intuitive grasp of the

subject matter. This process of "getting to understand how things work a little bit better" is indicative of the participant's accumulation of tacit knowledge through practice and exposure. In addition, the participant's use of "a little bit" in both "a little bit better" and "a little bit more natural" suggests a gradual, incremental process of tacit knowledge development. This is consistent with the notion that tacit knowledge is acquired through a continuous process of learning, reflection, and adaptation, rather than through a single activity or formal training session.

Tacit knowledge played a critical role in tackling the challenges of rapidly developing policy under uncertainty. With more immediate timelines as compared to the typical government pace, progress required trusting one's expertise and judgment despite discomfort. The lack of information and missing data necessitated relying on tacit knowledge accumulated from past experience and practice. With the lack and loss of institutional knowledge, individual tacit knowledge became even more vital. Practitioners leveraged their past experiences, intuition, and understanding of the context to make recommendations to fill gaps when explicit information was lacking. Additionally, practitioners employed their intuition to quickly synthesize inputs for decision-making. This demonstrates the importance of tacit knowledge for dealing with uncertainty. The findings align with the existing literature, which emphasizes that tacit knowledge is derived through practice, intuitively making sense, and enabling its application across different contexts (Krogh et al., 2000; Nonaka, 1991; Polanyi, 1966, 2009).

"I always rely on my intuition as well in terms of the bigger picture and how things work because that is that is a bit who I am." This quote from Participant F exemplifies the practitioner's confidence in using tacit knowledge to comprehend the broader context, demonstrating an intrinsic ability to see beyond the surface and understand the underlying mechanics of policy issues.

"That is a bit who I am" suggests that the participant sees their reliance on intuition and tacit knowledge as being intimately tied to their identity and sense of self, rather than just a skill or knowledge base they possess. The formulation implies this way of knowing and operating is deeply ingrained in who they are as a person. It is foundational to their approach rather than an external capability.

This perspective highlights how tacit knowledge can become deeply embedded in how an individual intrinsically makes sense of situations in a way that transcends just having access to certain external knowledge or skills. It is part of their lived experience and fundamental way of being that shapes how they process information and contexts.

Participant S does not rely on their intuition as much, they also ask their co-workers to review their work.

"I don't have to rely exclusively on my intuition, and we work on an exceptionally collaborative team which is really great. You don't do really any of your work in a bubble. Everything that I produce, I have my coworkers look at before sending up

and it's very, very collaborative and I think that adds a lot to my experience and it's really helped me kind of honed intuition a little bit more as I learn from others.”

Collaboration plays a role in refining the tacit knowledge of individuals. By engaging with peers, the practitioner's intuition is not only validated but also improved, suggesting that tacit knowledge can be enhanced through collective experience and shared practice.

The ability to collaborate effectively is itself a form of tacit knowledge, it is acquired through practice. The skills required for successful collaboration, such as effective communication, empathy, and the ability to work in a team, are often developed through experience and practice rather than through explicit instruction. This suggests that the very act of collaborating with others requires the application of tacit knowledge (Fernandez et al., 2020, p. 537; Van Houten, 2023, p. 199; Yakhlef, 2023, p. 176)

“[...] as you become a bit more familiar with sort of what our senior management is looking for and sort of how they think, it gets a little bit easy. I don't wanna say easier but it's it makes it a bit easier to do the job because you get a better sense of what it is that they're looking for and what's more, I guess, more likely to move forward.”

This quote from Participant T shows the growing understanding of the expectations and thought processes of senior management, a type of tacit knowledge that facilitates more effective decision-making and policy development. The ability to anticipate and

understand the expectations and preferences of senior management is a form of tacit knowledge because it is not explicitly taught or codified, but rather learned through experience, observation, and interaction. As policy practitioners become more familiar with the organization's culture, values, and decision-making processes, they begin to develop an intuitive sense of what is expected and what is likely to be well-received by senior management. This understanding is not based on explicit rules or guidelines, but rather on a deep, internalized knowledge of the organization's inner workings and the preferences of senior management.

This thesis does not explore the relationship between tacit knowledge and more collaborative management structures. For instance, it does not explicitly examine whether allowing practitioners to attend senior management meetings (to which they were not previously invited) lead to better utilization of tacit knowledge. Furthermore, while the study highlights improved information sharing, it does not establish whether this enhancement is related to tacit knowledge.

Contrary to the literature suggesting that tacit knowledge cannot be easily articulated (Cross, 1982; Nonaka, 1994; Polanyi, 1966), at first, participants believed they could document their knowledge through writing, aligning with Nonaka's view of tacit knowledge as something that can potentially be converted into explicit, codified forms. However, they acknowledged that some critical aspects of their personal, context-specific know-how gained through experience would likely be difficult to fully capture and articulate in written

form, highlighting the cognitive dimension of tacit knowledge encompassing beliefs, mental models and perspectives that are shaped by individuals' experiences.

"I could probably do a pretty good guide with the caveat that it's a very complicated process. And it's very interconnected, which I think would make it probably better for a telling, just because otherwise it would be a 300-page document." This quote from Participant N first says it is possible to document their knowledge but on second thought they think the complexity and interconnectivity might be better conveyed through storytelling or verbal explanation, which allows for richer context and adaptation to the audience's understanding.

"Probably there is a lot of nuances and I think that would get lost when you don't have the ability to kind of provide the colour commentary." Participant S shows awareness of the subtleties and finer details of tacit knowledge that might be lost in written documentation.

"I definitely think even if I'm able to maybe write out the process which might be helpful, there would probably be like ongoing work in terms of updating who to connect with, or the resources." (Participant T) This highlights that even if the process is written down, tacit knowledge is not static—it requires constant updating and revision, reflecting the ever-changing nature of the context.

Participants N, S and T initially seemed to adopt Nonaka's definition of tacit knowledge as something that can potentially be externalized into explicit, codified forms like technical

instructions or a manual. This aligns with Participant N's statement about being able to create "a pretty good guide" to document their knowledge, suggesting a view of tacit knowledge as transferable expertise that can be articulated and captured, at least to some degree. Their initial perspectives resonate with Nonaka's notion of the "technical dimension" of tacit knowledge, which encompasses the informal skills and know-how that organizations aim to convert into explicit, shareable formats through mechanisms like apprenticeship or externalization into training materials.

However, participants lack knowledge of tacit knowledge itself; they are unable to differentiate it from informational knowledge, and do not consciously learn to use it, highlights a significant gap. Their initial perspectives may represent a surface-level understanding of tacit knowledge as simply expertise to be documented, without fully grasping its deeply personal, context-specific and experience-based nature.

Harnessing tacit knowledge requires acknowledging its personal, subjective and experience-specific nature. While it cannot be directly instructed, government can create favourable conditions for tacit knowledge to be applied more consciously in the policy development process.

Nonaka's theory of knowledge creation, which emphasizes the dynamic interactions between individuals and their environment, rather than individual efforts alone (Augier et al., 2001; Fleming & Rhodes, 2017; Nonaka et al., 2000), is relevant as participants extensively discussed the collaborative environment within PHAC and across different

departments highlighting their exposure to senior management; that wealth of newly created knowledge could be leveraged for innovation.

Participants didn't talk about socializing their tacit knowledge (Nonaka) or mention people sharing it with them. Some mentioned team members sharing decks and background materials to get them up to speed on the file, not to tell them how to do their jobs. It is assumed practitioners know how to do policy work, and are expected to acquire the knowledge specific to a policy issue over time.

Practitioners rely heavily on tacit knowledge to design policies, especially during crises like COVID-19. This includes experiential knowledge from prior work on diverse issues, allowing them to navigate unfamiliar challenges and adapt rapidly. Practitioners also described using their intuition to make informed decisions, synthesize complex information, and anticipate senior management's needs. Contextual awareness of policy processes and organizational culture is essential, enabling practitioners to navigate bureaucracies and align with priorities. Collaborative skills like relationship-building and communication are valuable when working across teams and with stakeholders. Finally, adaptive expertise allows practitioners to apply their tacit knowledge across domains and quickly learn in unfamiliar areas.

The findings highlight the role policy practitioners' tacit knowledge played in navigating the uncertainties and time pressures of the COVID-19 crisis. With limited explicit information available, practitioners showed they relied on their accumulated knowledge,

experience, intuition, and contextual understanding to design policy measures. Their tacit knowledge allowed them to synthesize inputs, fill voids where explicit knowledge was missing, and make recommendations despite operating in uncertain and ambiguous conditions.

This aligns with literature emphasizing tacit knowledge as critical for innovation, as it enables individuals to recognize opportunities, reframe challenges, and apply insights across contexts (Nonaka, 1991, p. 101; Nonaka & von Krogh, 2009, p. 645). This study reinforces the value of leveraging policy practitioners' tacit knowledge, both within government and through external collaborations, to drive public innovation (OECD, 2017b, p. 232).

Public Innovation

The third objective of this research was to understand lessons learned for leveraging practitioners' tacit knowledge to support public innovation emerging from the COVID-19 crisis response, when not facing a crisis. In the context of this study, public innovation is defined as the development and implementation processes of novel approaches through government intervention that leads to improved societal outcomes and public value.

Interviews with policy practitioners at PHAC revealed several key insights that have implications for fostering public innovation in line with the above definition. During the

pandemic, practitioners experienced increased exposure to senior management and greater transparency in decision-making processes. Participant K noted the exceptional nature of this access, which was a result of the urgency and importance of the work: “In PHAC or, at least in my position in PHAC, I had much more exposure to senior management and, I think part of it comes from the immediacy and the high priority of the files that you're working on. I think sometimes, in PHAC, you would just skip through the hierarchy because you had information, and someone needed it, and they needed it right now.”

Similarly, Participant N noted, "I was also fortunate to work for executives who were incredibly transparent. We had daily touch bases, every morning, and again that was a product of the fact that things were moving so quickly, and so we needed to have a touch base every day to kind of set out the priorities for the day." This collaboration across hierarchical levels has the potential to drive the development of novel approaches by facilitating the sharing of knowledge and ideas between practitioners and senior management. If maintained beyond the crisis, this collaborative approach could help to break down traditional barriers to innovation in government, such as silo mentality and risk aversion (Duffy & Cook, 2019, pp. 1999–2000; Savoie, 2015), ultimately leading to improved societal outcomes and public value.

Moreover, the interviews highlighted the importance of strengthened collaboration within and between departments during the pandemic response. As Participant T stated, "We do need to work with other government departments as well as, provincial, territorial and indigenous organizations, because we do work with in the public health space, a lot of

health matters are also under PT [provinces and territories] jurisdiction." By operating in a more horizontal and non-hierarchical manner, practitioners were able to break down silos and foster greater cooperation across organizational boundaries. This collaborative approach aligns with existing literature emphasizing the role of cross-boundary collaboration in supporting public innovation (Bason & Schneider, 2016, p. 34; Lewis et al., 2018) and can contribute to developing and implementing novel approaches that enhance public value.

While practitioners in this study did not fully integrate end-user perspectives through design methods like design thinking, service design, or ethnography, they did engage in more transparent and inclusive communication practices. As Participant S noted, "Everything that I produce, I have my coworkers look at before sending up and it's very, very collaborative and I think that adds a lot to my experience and it's really helped me kind of honed intuition a little bit more as I learn from others." This openness to diverse perspectives and feedback aligns with the literature on public innovation, which emphasizes the need to balance existing and new knowledge in the policy development process (Hermus et al., 2020; Romme & Meijer, 2020; van Buuren et al., 2020). By incorporating a wider range of perspectives, policy practitioners can develop more effective and innovative solutions that lead to improved societal outcomes.

Practitioners' reliance on tacit knowledge gained from experience was also critical to filling gaps when explicit knowledge was limited during the pandemic response. As discussed in the previous section, the interactions between practitioners and their collaborative

environment generated new tacit knowledge, consistent with Nonaka's theory of knowledge creation (Nonaka et al., 2000). This newly created tacit knowledge, when combined with the externalization process, serves as a valuable resource for innovation in policy development, not only during the COVID-19 pandemic but beyond, contributing to improved public value.

The lessons learned from the experiences of practitioners at PHAC during the COVID-19 pandemic offer valuable insights for supporting public innovation, defined as the development and implementation processes of novel approaches through government intervention that lead to improved societal outcomes and public value. The increased exposure to senior management, greater transparency in decision-making processes, strengthened collaboration within and between departments, and reliance on tacit knowledge all have the potential to foster ongoing innovation efforts in government. However, to nurture a culture of public innovation, additional measures such as the following could be integrated into public sector practices:

Facilitating mobility in and out of government, through initiatives like secondments, sabbaticals, or temporary assignments, and knowledge exchange across sectors can broaden the depth and breadth of tacit knowledge, experiences, and formal and informal networks available to policy practitioners (Kaur et al., 2022, p. 49; Pahlka, 2023, p. 272). Exposure to diverse perspectives from academia, not-for-profit organizations, private sectors, think tanks, other levels of government, indigenous organizations, or international

bodies, like the OECD or NATO, can stimulate novel ideas and approaches, fostering cross-pollination of innovative practices.

Encouraging co-creation methodologies can enhance the development of citizen-centric solutions by actively involving stakeholders and end-users throughout the innovation process (Cottam, 2018). This collaborative approach can lead to more impactful and sustainable solutions that better address the needs and realities of the communities they serve.

Adopting a mission-oriented approach could provide a clear and ambitious direction for public innovation efforts, galvanizing resources and fostering cross-departmental collaboration towards addressing grand challenges through novel and transformative solutions (Mazzucato, 2018).

Embracing the practice of exaptation and bricolage can lead to a more nimble and resourceful approach to innovation. These practices involves repurposing existing capabilities for new and unexpected applications, allowing the government to build on its current strengths and redirect them to meet emerging needs (Fuglsang & Sørensen, 2011, p. 583; Snowden, 2012; Tang et al., 2022, p. 4; Van De Ven & Johnson, 2006, p. 806).

Creating spaces for sensemaking and experimentation is imperative. Such environments enable the safe testing and refinement of new ideas, allowing for incremental adjustments

and learning (OECD, 2018, p. 246; Privy Council Office, 2017). By validating concepts in a controlled setting before they're scaled up, the risk associated with innovation is managed more effectively, and the chances of success increase.

Together, these strategies create a narrative of innovation that is dynamic, inclusive, and purpose-driven, positioning the public sector to better tackle the complex challenges of our time.

By maintaining and building upon the positive practices developed during the pandemic, while also integrating these complementary strategies, policy practitioners can help create a more agile, responsive, and innovative public sector that is better equipped to address complex challenges and deliver improved outcomes and public value for citizens.

This chapter has discussed the key findings from the research in relation to the objectives of examining policy practitioners' experiences with design approaches, application of tacit knowledge, and lessons for public innovation during the COVID-19 pandemic response.

The experiences of practitioners at PHAC during this unprecedented crisis have shed light on the importance of adaptability, collaboration, and the use of both explicit and tacit knowledge in rapidly developing policies under immense time pressures and uncertainty. While not explicitly using design language, practitioners drew upon informational and inspirational design approaches, aligning with the conceptual framework. Their ability to

adapt responses to changing conditions demonstrated agility in navigating complexity through approaches like collaboration, communication, and feedback.

In addition to the reliance on tacit knowledge, interactions between practitioners and their collaborative environment also generated new knowledge, consistent with theories of knowledge creation. This highlights the importance of tacit knowledge for policy under uncertainty and the potential for leveraging newly created tacit knowledge for innovation in policy development.

Lessons learned from the pandemic response, such as increased exposure to senior management, greater transparency in decision-making processes, and strengthened collaboration within and between departments, offer pathways for supporting public innovation beyond times of crisis. By fostering an environment that encourages the sharing of knowledge and ideas across hierarchical levels and organizational boundaries, policy practitioners can help to overcome traditional barriers to innovation in government and develop novel approaches that lead to improved societal outcomes and public value.

Limitations of the Research

The small sample size from a single organization limits generalizability of the findings. As the sole researcher, my personal views could have influenced data interpretation despite reflexivity efforts. Additionally, the reliance on self-reported interview data left room for recollection errors, or omissions of politically sensitive information, particularly concerning

Ministers/Ministers' offices, central agencies, and senior management. The interviews provide only a snapshot of the participants' experiences at a specific point in time. Understanding these limitations is crucial for contextualizing the findings and recognizing the need for further corroboration before drawing broader conclusions.

Overall, while the findings offer valuable insights, it is important to acknowledge these limitations. The height of the crisis is likely in the past, and conducting research in real-time encompassing the full COVID-19 response may not be feasible anymore. Nevertheless, this study provides useful insights, based on a limited perspective of the experience of policy practitioners. To establish more comprehensive and reliable best practices, it is necessary to conduct further research, through larger samples across multiple departments to gather perspectives from a broader range of practitioners, comparing similarities and difference in practitioners' application of tacit knowledge, document analysis to triangulate insights from interviews, and longitudinal tracking to understand how policy practice and tacit knowledge evolve over time as this research provides snapshots rather than longitudinal perspectives of practitioner's response.

Contribution to Research

This research contributes to addressing practical knowledge gaps in the literature by documenting the perspectives of policy practitioners at the working-level. Their accounts provide valuable insights into their use of tacit knowledge during the policy development process, particularly in response to the challenges posed by the COVID-19 pandemic. It

demonstrates the importance of examining policy development through the lens of practitioners' experiences.

The study's findings underscore the role of tacit knowledge in enabling practitioners to adapt to the rapidly evolving demands of the COVID-19 pandemic. By demonstrating how practitioners drew on their accumulated experiences, intuition, and contextual understanding to inform policy design, this research contributes to a deeper understanding of how tacit knowledge is mobilized in practice. These insights extend the existing literature on tacit knowledge by providing concrete examples of how it is applied in the context of policy design during a crisis.

Moreover, the study's application of Hermus et al.'s informational and inspirational approaches to design offers a novel framework for examining the interplay between tacit knowledge and evidence in policy development. The findings highlight the importance of balancing these two approaches and leveraging the tacit knowledge of practitioners to generate innovative solutions. This contribution extends the current understanding of design approaches in public administration and offers a promising avenue for future research.

Contribution to Practice

The findings of this research offer valuable insights and recommendations for policy practitioners, managers, and organizations seeking to enhance their capacity to leverage

tacit knowledge for policy development, particularly during crises. By examining how practitioners at PHAC navigated COVID-19's challenges, the study provides a rich foundation to inform future practices.

A key finding highlights the importance of recognizing and valuing practitioners' tacit knowledge - the accumulated experiences, intuition, and contextual understanding that enabled them to adapt rapidly when lacking relevant expertise or historical knowledge. The unique challenges and urgency necessitated unprecedented flexible and adaptive approaches, such as pre-negotiating vaccine purchases before products existed.

The research underscores the need to integrate both informational (evidence-based) and inspirational (leveraging tacit knowledge and creative insights) approaches to policy design. While evidence remains important, practitioners' ability to leverage their tacit knowledge proved equally vital for effectively navigating the crisis's uncertainties.

The pandemic response demonstrated an openness to non-traditional ways of working and willingness to explore alternative approaches as circumstances evolved. This flexibility presents an opportunity to institutionalize such approaches within existing structures by balancing informational and inspirational design practices. Doing so can foster public innovation beyond crisis periods.

Lastly, the pandemic response challenged conventional processes, this experience highlights opportunities to rethink policy design by embracing inspirational knowledge

generation to solve real-world problems, in addition to applying existing knowledge. Practitioners demonstrated their ability to develop new processes, products and services that improved outcomes for Canadians.

Future Directions for Research

Policy practitioners have shown that they mainly use the informational approach, but when there is a lack of evidence, they explore the inspirational approach. While the informational approach provides a solid foundation based on existing data and research, an overreliance on it could lead to path dependency, or copying what has been done in other jurisdictions potentially limiting innovation and overlooking novel solutions (Crow et al., 2023, p. 13). It would be valuable to conduct future research to explore how practitioners can further enhance the use of the inspirational approach to design in the policy development process by developing a design mindset and integrating end-user perspectives through methods such as co-creation, design thinking, service design, or ethnography (Vaz & Prendeville, 2019, p. 141). Striking a balance between the informational and inspirational approaches, by encouraging creativity, imagination, and user-centricity, could help overcome path dependencies and foster more innovative and impactful policy solutions.

Chapter 8 : Conclusion

This thesis explored how policy practitioners leveraged their tacit knowledge and used design approaches during a time of crisis. Through a case study of federal policy practitioners' experiences in developing pandemic response measures for a novel threat, this research provides insights into the importance of tacit knowledge when facing uncertainty.

The findings revealed that in the face of unfamiliar and pressing challenges, with limited information and subject-matter expertise, practitioners were able to quickly develop policy responses by drawing on their accumulated knowledge from past experiences, education, and intuition to address novel issues. This demonstrates the applicability of tacit knowledge across different contexts, even in situations characterized by a lack of information and uncertainty.

The unique circumstances of the pandemic response presented opportunities for working differently, such as increased information sharing, flexibility, open and transparent communication, and a collaborative approach. These suggest a movement towards a more inspirational approach to policy development. The findings highlight the potential to generate inspiring new ideas and build upon existing knowledge through a combination of approaches.

However, maintaining these new ways of working post-crisis remains a challenge. The window provided by the crisis may be closing as conventional processes and constraints reassert themselves (Breton et al., 2024, p. 34). Without concerted efforts, the more agile,

open, and collaborative ways of working risk dissipating, exemplifying missed opportunities for institutionalizing enhanced policy development approaches.

Crises have been shown to precipitate a wave of new policy interventions that redefine governmental roles and capacities (Crowley et al., 2021, p. 58). The pandemic has brought about substantial changes in the functioning of the public service, leading to shifts in citizens' trust in public institutions, increased expectations, and decreased satisfaction with government services (Privy Council Office, 2023, p. 4). It has highlighted that the public sector's challenges are not only growing in complexity but also in the frequency and scale of societal turmoil, underscoring the necessity for innovative approaches to address intertwined policy issues amidst ongoing uncertainty and disruption (C. K. Ansell et al., 2021, p. 5).

By reframing policy development as design, we open up opportunities for greater creativity, imagination, and the intentional utilization of tacit knowledge to drive public innovation. This research not only highlights the significant role of working-level practitioners in shaping solutions but also underscores the importance of nurturing their design skills through increasing the use of the inspirational methods approach to design. This approach holds considerable potential for driving public innovation to address complex issues such as the loss of trust in institutions and threat to democracy.

Appendices

Appendix A – Consent Form

Appendix B – Interview Guide

Appendix A – Consent Form

Letter of Consent

Title of the study: How might policy practitioners use their tacit knowledge for public innovation? A case study on the design of policy measures to address COVID-19

Nathalie Leclerc, master's student, School of Social Innovation, Faculty of Human Services, St. Paul University, under the supervision of: Simon Tremblay-Pepin, School of Social Innovation, Faculty of Human Services, St. Paul University.

Invitation to Participate: You are invited to participate in the abovementioned research study conducted by Nathalie Leclerc.

Purpose of the Study: The purpose of the study is to understand how policy practitioners used their tacit knowledge to design policy measures to address COVID and how tacit knowledge could be leveraged for public innovation.

Participation: Your participation is completely voluntary. You are not required to respond to any question or participate in any discussion that you are not comfortable with or that you feel may compromise your identity. Should you choose not to respond, there will be no negative consequences for you. You are being asked to participate in a 1hr interview through a virtual platform of your choice (e.g., Teams, Zoom). If you agree to participate, the audio of the session will be recorded, however information derived from transcriptions of the recordings will be securely stored on a password protected computer, with your identifying information coded, removed and stored separately.

Risks: The risks associated with participating in this study are assessed as minimal. Some people may experience discomfort when answering questions, however, the potential risk and level of distress is estimated to be no greater than what one would experience in everyday life, and we seek to minimize this by keeping your answers confidential. Should you experience discomfort, you may choose not to answer a question or continue participation in the research.

Benefits: Your participation in this study will contribute to the advancement of the practice of policy in order to build the capacity for innovation.

There are no direct benefits to you as a participant, though you will be contributing to improving professional development in the public service.

Confidentiality and anonymity: The information shared with the researcher will remain strictly confidential. The contents will be used only for analysis and that your confidentiality will be protected.

Anonymity will be protected; the identity of participants will not be revealed in any publications.

Conservation of data: The data collected (recordings of interviews, transcripts, notes) will be stored on the researcher's computer and backed up on an external hard drive. The researcher will keep the information confidential and will protect the anonymity of the participants in any reports or presentations. Real names will never be included with quotes and the researcher will do her best to make sure quotes do not identify participants. Any identifying information (e.g.,

Employee Assistance Program (EAP)

The Employee Assistance Program (EAP) is available to you and your immediate family members 24 hours a day, 7 days a week if you are in distress or need some mental health support.

Contact Number

Toll-free: 1-800-268-7708

TTY (for people with hearing impairments): 1-800-567-580

Appendix B – Interview Guide

Hi,

Could you turn off your camera and replace your name with your initials? Thanks.

My name is Nathalie and as I mentioned in my email, I am a master's student at the School of Social Innovation at St. Paul University. I am also a policy practitioner in the federal public service. My master's thesis is independent of my work as a public servant.

As part of my master's degree, I am conducting a research study to better understand how policy practitioners used their tacit knowledge to design policy measures to address COVID at the Public Health Agency of Canada (PHAC). I am conducting interviews with ECs who have worked on COVID at PHAC to discover their perspectives on policy development.

As you played a role in the policy development of COVID measures, I would like to speak with you about your experience at PHAC. Is this still a convenient time for the interview?

- The interview should take about one hour.
- Participation in this interview is entirely voluntary and there are no known or anticipated risks to participation in this study.
- The questions are quite general. I will not ask you to disclose secret information.
- You may decline to answer any of the questions you do not wish to answer and may terminate the interview at any time. With your permission, the interview will be audio-recorded to facilitate collection of information, and later transcribed for analysis.
- Your identity will be confidential.
- The data collected will be kept in a secure location and disposed of in 5 years.
- If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please feel free to contact Simon Tremblay-Pepin, his email is on the consent form.
- This study has been reviewed and received ethics clearance through St. Paul University Research Ethics Board.

Do you have any questions?

Do you agree to participate?

Are you ready to start?

Questionnaire

1. Professional background

Briefly, what is your professional background?

Title, role, responsibilities, time at PHAC

Briefly about the work of your team at PHAC

2. Story

Think about a policy you worked on at PHAC to address COVID, it might be easier to think of a more recent or memorable example for the next questions

Please share what you can on the objective and background of the policy.

3. Policy Development Context

What was your role?

Who was involved? [PHAC, other departments, different jurisdictions, Canadians]

What were the key policy constraints? [ex. scope, policy instrument, budget, timelines]

What challenges have you met? [ex. approval, policy instrument, science]

Was what you had to do prescriptive, or did you have some latitude?

4. Knowledge and experience

To do the work, did you rely on knowledge and experience gained outside your position at the time?

Could the knowledge you used be written down?

Would you have difficulty writing down the knowledge you used? Would it be easier to tell what you did than to write it down?

Did you feel you knew how to do this without thinking about it?

Were you already familiar with how to do this?

Did you rely on your intuition?

5. Lessons Learned

What have you learned from this experience?

What has been interesting, striking, surprising, disruptive?

Do you think you will be able to use what you have learned from that experience in a different context, outside of the context of a pandemic?

6. Wrap-up

Thank you, that was my last question. Is there anything else you would like to add?

Thank you for taking the time to talk to me about your policy work at PHAC. If you think current or former colleagues at PHAC might be interested in sharing their stories, could you please provide me with a few names, now or by email?

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