







How Did an Integrated Health and Social Services Center in the Quebec Province Respond to the COVID-19 Pandemic? A Qualitative Case Study

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ABSTRACT

During the first and second waves of the pandemic, Quebec was among the Canadian provinces with the highest COVID-19 mortality rates. Facing particularly large COVID-19 outbreaks in its facilities, an integrated health and social services center in the province of Quebec (Canada), developed resilience strategies. To explore these diverse responses to the crisis, we conducted a case study analysis of a Quebec integrated health and social services center, building on a conceptualization of resilience strategies using “configurations” of effects, strategies, and impacts. Qualitative data from 14 in-depth interviews conducted in the summer and fall of 2020 with managers and frontline practitioners were analyzed through the lens of situations of “anticipation,” “reaction,” or “inaction.” The findings were discussed in three results dissemination workshops, two with practitioners and one with managers, to discern lessons they learned. Three major configurations emerged: 1) reorganization of services and spaces to accommodate more COVID-19 patients; 2) management of contamination risks for patients and professionals; and 3) management of personal protective equipment (PPE), supplies, and medications. Within these configurations, the responses to the crisis were strongly shaped by the 2015 health care system reforms in Quebec and were constrained by organizational challenges that included a centralized model of governance, a history of substantial budget cuts to long-term care facilities, and a systematic lack of human resources.

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Introduction

The SARS-CoV-2 virus reached Canada on January 25, 2020, and the first case in Quebec was identified on February 28, 2020. Quebec's mortality rates were among the highest in Canada during the first and second waves of COVID-19 (43.2 and 1.6 per 100,000 inhabitants, respectively).¹ As of May 13, 2022, more than 8,180 people had died in Quebec's long-term care facilities due to COVID-19.² Quebec's health care system has been massively impacted by this pandemic, especially in terms of retention of health human resources (HHR), already precarious due to major labor shortages and resource deficiencies in work environments.³ During the pandemic, various crisis management measures⁴ have thus been taken to maintain, improve, and restore the health and wellbeing of the Quebec population—the mission of Quebec's health care system at large.

To better understand the effects of this pandemic on Quebec's health care system, it is essential to consider

three contextual elements related to the 2015 reforms, aiming to improve quality of care delivered by mainly integration of services, and that finally reshaped the system.^{5,6} First, a core feature of those reforms was the integration of social services with more traditional medical sectors and the creation of “integrated health and social services centers” (CISSS, or CIUSSS when university affiliated), each encompassing a full range of facilities and services for a designated geographic region. CISSSs are responsible for all facilities and service delivery on their territories, including long-term care facilities (CHSLD). A second contextual element is the centrality of hospitals within these CISSSs, such that certain clientele considered as nonacute care—such as the elderly and persons with loss of autonomy—have received significantly less attention from the CISSSs responsible for their care. Earlier, a 2003 study had already shown a clear imbalance between public supply and demand for these services, with a capacity

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assessed at only 85% of residents' needs.⁷ A third contextual element is the chronic lack of HHR retention in Quebec's health care system. CISSS Laval, with one of the largest health territories in Quebec, has experienced HHR turnovers for years, prompting actions such as a sit-in in early 2018.⁸ Shortages were particularly acute in CHSLDs.⁹ Thus, the COVID-19 crisis added to an already critical situation of chronic understaffing in Quebec's health care system, particularly in CHSLDs.

How can a health system with such constraints be resilient when confronted with a series of structural (e.g., lack of HHR retention) or contextual (e.g., epidemics) shocks?¹⁰ Literature on resilience of health systems help us understand the capacities of a health system faced with shocks to absorb, adapt, and/or transform in order to maintain and/or improve universal access to comprehensive, relevant, and quality health care and services.^{10,11} Most studies on hospital resilience in the context of COVID-19 have focused on organizational levels, specific categories of services¹¹ and/or of HHR.^{12,13} However, few studies analyzed this resilience on a micro/interindividual level. The transfer of power to operational teams established by crisis management measures, which can be seen at first as health system resilience, ask the question of individual responsibility toward this resilience. In our case, we hypothesize that resilience was first and foremost a matter of individual workers. The aim of the present study was to provide an overview of resilience during the first and second waves of the COVID-19 pandemic experienced by a large CISSS of the Montreal metropolitan region. Focused on CISSS Laval, one of the CISSSs most affected by the pandemic, this study highlights resilience strategies aimed at providing care and protecting vulnerable clientele during the pandemic. These experiences of resilience¹⁴ underscore how similar integrated health and social services may have anticipated, reacted, or not reacted to the crisis, and the effects on organizational routines.

Materials and Methods

Study Design and Setting

This is a single case study of CISSS Laval, a Quebec integrated health and social services center, and its pandemic response, during the first and second waves of COVID-19.¹⁵ Laval is a large city that is part of the Montreal metropolitan region. CISSS Laval is representative of urban CISSSs, serving a very large catchment area in terms of both population and geography. Its general hospital was created in 1978 and provides, with the Jewish Rehabilitation Hospital, health services to approximately 450,000 inhabitants. It also comprises numerous long-term care facilities, including six CHSLDs. In 2015, CISSS Laval

had 10,357 employees, of whom 24% were nurses. Its annual budget is about \$970 million CAD.

Data Collection

A purposeful sampling strategy was used to select a diversity of participants with different roles and duties, working in intensive care units, pharmacies, administration, public health, and infection control. A snowball strategy was also used to recruit participants. Fourteen in-depth interviews were conducted during the first and second waves of COVID-19 (summer and fall 2020) with physicians (n = 2), nurses (n = 3), infection control and frontline staff (n = 6), and managers (n = 3), and empirical saturation was reached. The interview guide was developed based on the conceptual framework for the larger multi-country research project on health systems resilience (HoSPiCOVID Project).¹⁴ That research project also featured a "lessons learned"¹⁵ process wherein key findings were collected and discussed with study participants. We thus compiled this information for our case,¹⁶ i.e. CISSS Laval, based on our conceptual framework,¹⁴ then discussed and validated it during three results dissemination workshops aimed at identifying both positive and negative experiences. Two workshops (spring 2021) were conducted with CISSS employees (n = 116 and n = 87), and one with managers (n = 12).

Data Analysis Framework

For data analysis, we used the analytical framework on health systems resilience designed for the HoSPiCOVID project by Ridde et al.¹⁴ In it, the COVID-19 pandemic represents a series of shocks to the system (i.e., external and internal events). Conceptualized through configurations of resilience strategies, the health system's responses to these shocks are defined as non-linear associations between, a) the effects, positive or negative, caused by the pandemic; b) the strategies implemented to deal with these effects; and c) the impacts, positive or negative, of these strategies on organizational routines.

We focused on three configurations, and subsequent strategies, that emerged during analysis as the topics most discussed and that were subsequently confirmed in the results dissemination workshops, namely, 1) reorganization of services and spaces to accommodate more COVID-19 patients; 2) management of contamination risks for patients and professionals; and 3) management of personal protective equipment (PPE), supplies, and medications. Two other major themes, i.e., adaptation of hospital work¹⁷ and impact of leadership styles on resource management during the crisis,¹⁸ were addressed in separate studies. These three configurations were

categorized as potential situations of “anticipation,” “reaction,” and/or “inaction” toward COVID-19. More specifically, situations were described as “anticipation” when strategies anticipated potential effects of the pandemic and had impacts; as “reaction” when pandemic effects led to the development of strategies, which in turn had impacts; and as “inaction” when effects did not generate strategies. Anticipation, reaction, and inaction are primarily descriptive concepts with no performative value judgment.

Interviews were transcribed and coded using computer-assisted qualitative data processing software (QDAMiner). Coding was guided by the framework analysis approach and principles, i.e., using a preset analytical framework (presented above) and gradually developing descriptive and explanatory accounts to make sense of the data, both from the interviews and from the workshops.¹⁹

Results

Laval's CISSS: Key Contextual Elements

Laval was one of the territories most affected by the COVID-19 pandemic in Canada and ranked second in Quebec in terms of morbidity.²⁰ More specifically, 14% of Laval's CHSLD residents died between March and May 2020, compared to 11% in Montreal. Three contextual elements emerged as potential explanations for these results, namely: 1) a strict top-down, centralized governance model; 2) large budget cuts to long-term care facilities; and 3) systematic HHR retention issues. These challenges were confirmed by respondents. Despite these challenges, CISSS Laval deployed multiple and varied responses illustrating resilience, which were analyzed within three configurations.

Configuration 1: Reorganization of Services and Physical Spaces to Accommodate More COVID-19 Patients

Effects

The Quebec pandemic context, with the first Ministry order declaring a health emergency in late March 2020, initially had the effect of stressing the need to protect hospitals against an influx of patients, including from CHSLDs. This idea was quickly incorporated into hospitals' preparedness efforts, resulting in a general movement to protect hospitals more than other facilities. Also, certain areas, such as social services locales in CHSLDs, were designated as potential additional absorption spaces. These effects generated organizational and interpersonal anxieties and instability.

Strategies

Anticipating these effects, CISSS Laval began reorganizing services in February 2020. First, it increased the hospital's intensive care capacity, by reorganizing ICUs and installing outside trailers with more ICU beds. Intensive care home services were also developed later on, and various non-traditional sites for intensive care were created. Pharmacy satellites were also set up in certain services, such as intensive care, to adapt care delivery in a context of diminishing availability of supplies. To help workers in their new roles, those new spaces were supported by regular staff meetings and sharing of experiences and information. A zoning strategy was adopted: “red” or “hot” zones for COVID-19 infected patients, “green” for non-infected patients, and “yellow” for non-infected patients requiring isolation. Health workers were, at least initially, designated to a specific type of zone. In particular, stringent infection control measures with PPE were mandatory in red zones.

HHR strategies were adopted to support these reorganizations. Compulsory overtime was required of all clinical and administrative staff. Staff were also redeployed to departments and facilities needing more resources. Clinical and administrative staff were paired to facilitate adjustment and overcome traditional barriers to interprofessional collaboration. As health workers successively became infected themselves, some of the zoning strategy was abandoned. Because of HHR redeployments, it was sometimes impossible to maintain separation between zones. Some improvisation occurred; health workers were assigned mandatory overtime, and in some services HHR coverage was poor. To guarantee the security of spaces in peripheral facilities (such as CHSLDs), HHR had to be deployed on a mandatory basis, underscoring the urgency of the situation.

Impacts

Prior to the pandemic, there were already many HHR issues in the health care system, including inequities in treatment between categories of workers or services and untenable workloads. The above-mentioned reorganizations exacerbated these inequities, with potential for differential treatment between workers in hot/red zones and others. In those units, new teams had to be created while ensuring their security, leading to instabilities and issues of professional identity. For instance, nurses working in youth services were transferred to resources for the elderly, creating confusion in their roles and practices. These instabilities may also have caused post-traumatic stress disorder among staff deployed to unfamiliar services without guidance. In

positive terms, evidence of individual resilience and social responsibility on the part of professionals emerged from this configuration. Overall, the strategies resulted in a heightened sense of collective responsibility. Respondents considered that these reorganization successes resulted mainly from workers' dedication.

The large numbers of COVID-19 infections in early spring 2020 showed a certain efficacy of the strategies in hospitals, where red zones were quickly designated and protected. However, in non-hospital facilities considered peripheral, such as CHSLDs, the strategy could be identified as a lack of anticipation. Our interviews made explicit a trade-off to make the choice of what spaces were to be protected. As a result, the protection of the hospital was conceived at the expense of less strategic facilities such as CHSLDs. This differential approach, which favored hospital-based acute care over long-term care and social services, enabled the hospital to absorb cases, but at the expense of patients in non-acute care facilities, at least at the beginning of the crisis. In conceptual terms, this meant anticipation for the hospital, and inaction, followed by reaction, for CHSLDs. Various resilience strategies (i.e., reorganization of services and HHR) were intertwined, revealing ways of organizing and reacting that were embedded into organizational cultural visions that pre-dated the pandemic.

Configuration 2: Management of Contamination Risks for Patients and Professionals

Effects

The COVID-19 pandemic generated fears among HHR about infection and security risks for patients and professionals. These fears led to the expansion of infection prevention and control (IPC) services outside the hospital and into other CISSS facilities. This crisis also exposed IPC's ambiguous position in the CISSS, being nominally under the authority of the nursing department but with an unclear status in relation to CISSS facilities outside the hospitals. The IPC chief was, in fact, a Ministry-appointed independent consultant with no organizational authority over any CISSS facilities. The pandemic also underscored the IPC teams' inadequate human and financial resources in general, with only 20 staff: 12 at the beginning and eight hired once the pandemic began. In this challenging context, decisions had to be taken within constraints imposed by the relative scarcity of resources (IPC counseling, PPE, blood products, hospital beds, ventilators, etc.) to manage contamination risks among patients, families, and caregivers.

Strategies

Initially, strategic discussions on pandemic management at the CISSS included IPC, but mainly in an

advisory role. A key positive change was the implementation of an autonomous onsite laboratory for SARS-CoV-2 testing within the CISSS as of April 15, 2020, which could perform up to 3,500 tests per day—a significant increase over the approximately 50 tests per day (during influenza season) experienced prior to the pandemic and outsourced to external laboratories. This high capacity supported more local governance of IPC within the CISSS and improved SARS-CoV-2 prevention and control across facilities.

Numerous IPC strategies were developed in different facilities to provide training on managing risks and security. Prior to the pandemic, CISSS Laval IPC teams usually conducted cursory visits of about 50 facilities annually; during the first two waves of the pandemic, they visited around 300 centers or services. A key strategy was the training and deployment of up to 140 IPC “coaches,” including some new hires. The CISSS logistics department also played a role in infection risk-management strategy and, like IPC, saw its role expand during the pandemic. Supplies were rationed and special protection measures were adopted and carried out by the logistics department. Innovative strategies were developed, such as re-use of N-95 masks and local production of face shields. This department also went into the field, visiting facilities to control supplies and use.

Impacts

The main impact of these IPC strategies was the rapid and exceptional empowerment of the CISSS to process its own test samples, a major factor in the pandemic management, in general, and in mitigating infection risks among staff, in particular. This crisis also led to recognition of the importance of IPC teams, especially by strategic and clinical management. The IPC teams, faced with significant peer pressure from the medical and paramedical professions, used diplomacy to ensure their recommendations were implemented, especially when clinical teams had already implemented their own IPC.

In terms of “reaction,” resources were increased with the recruitment of IPC coaches. There was also a lack of anticipatory IPC strategies for peripheral facilities, which were much more complex to define than for a hospital, due in part to greater HHR mobility across facilities. PPE fit tests had not been conducted prior to the pandemic, leading to delays in crisis response and equipment being non-adapted. Moreover, IPC coaches were not always welcomed in the teams, sometimes seen as arriving too late and/or introducing new norms that contradicted earlier norms, which could inhibit the sustainability of the measures. Overall, again, “anticipation” and “reaction” overlapped, depending on the facilities and spaces considered.

Configuration 3: Management of PPE, Supplies, and Medications

Effects

The pandemic caused shortages of PPE and medications in the CISSS. PPE shortages may have led to inappropriate use or reuse of equipment, as well as increased infection risk and heightened anxiety among HHR. The pandemic highlighted the need for better coordination between clinical and supply teams. In particular, the CISSS's highly centralized organizational structure had a significant impact on the processes for managing supplies, and more specifically PPE. The supply department was, in fact, poorly coordinated with department's needs, consisting of a single point of service for hundreds of facilities, and responsible for everything from snacks for youth centers to PPE supplies, such that it was overwhelmed during the successive COVID-19 waves. Despite the CISSS's strong authority (in relation to Ministry orders) and resources (financial and human), it had not yet properly exercised those before the pandemic. This led to critical shortages in some peripheral facilities, with insufficient medicine, PPE, and hygiene products. More specifically, shortages of anesthetics and respirators led to critical situations.

Strategies

Various strategies were employed to address the pressure on supplies and other inventories. At a strategic level, the Ministry set up statutory committees to facilitate dialogue between CEOs of integrated and non-integrated facilities, on one hand, and between logistics and procurement directors, on the other. While procurement of material was the responsibility of each CISSS, which could order what they needed on their own, portions of the CISSS's acquisitions (masks, gowns, swabs) were put in the provincial reserve for distribution to other facilities in need.

For pharmaceuticals, mini-pharmacies were implemented within certain hospital departments, resulting in a decentralization of supply and inventory management services. Some teams also turned to community pharmacies or other private clinics to augment their inadequate supplies. This innovative strategy ensured supplies from outside traditional channels. With regard to professional practices, many adaptive strategies were also used, such as medication exchanges, sometimes described as "pharmaceutical improvisation." Generally, a certain solidarity was seen among supply departments in the greater Montreal area, with informal meetings to exchange supplies when necessary and possible.

Impacts

Specific CISSS departments reacted strongly to PPE shortages. Meanwhile, however, the CISSS had yet to assume fully its territorial responsibility and authority as envisioned by the 2015 reforms, and the pandemic exposed the difficulty of managing supplies for such a vast health territory.

Sharing among facilities was a positive aspect, given the competitive context wherein all facilities in the health system had become independent "clients" of the Ministry, a process already at play since earlier reforms but reinforced by the 2015 reforms. Another positive aspect was that the pressure to manage supplies at a macro level led to a recognition of logistics departments' creativity and inventiveness. Indeed, they succeeded to some extent in scaling up certain individual or collective initiatives to improve supply management and stock monitoring, through "therapeutic improvisation" or informal meetings.

The administration showed a strong capacity for "reaction." Logistics departments' increased power resulted in stronger coordination, as they were legitimized to prescribe certain usages, such as those of masks. However, those strategies led to the perception, by HHR and the media, that standards for PPE use were adapted to actual PPE inventories, rather than the other way around. Some health care staff experienced this as a breach of trust with managers, or even as endangerment.

Discussion

Our study is among the few in Quebec to investigate resilience strategies adopted by an integrated health and social services center during the COVID-19 pandemic. Based on this case study, we have described three strategic configurations employed to respond to pandemic effects during the first and second waves. This study highlighted that perceptions of situations of "anticipation," "reaction," and "inaction" depended on the type of facilities considered (i.e., hospital vs. long-term care facilities), and in turn, also contributed to the differentiation of spaces and populations served. The study's time frame may also explain certain variations between these concepts, notably because lessons learned from these configurations may have led to better reactions during subsequent waves of the pandemic. In terms of resilience, CISSS Laval appeared to have adapted and transformed its services to the extent possible within the constraints of its limited resources.²¹ In addition to informing on COVID-19 resilience strategies, this analysis opened the door to a more generic reflection on Quebec's health care system and its structures and

processes, in a context where capacity for resilience is shaped by past reforms.^{22,23}

Initially, strong crisis management preparedness, gained through similar past crisis experiences, made it possible to mobilize existing resources and capabilities, i.e., to anticipate.²⁴ It was also possible to capitalize to a certain extent on their experiences of successive waves. That this anticipation was orchestrated by the Ministry might represent one positive aspect of a centralized health system in facing a crisis, which has also been noted in comparable health care systems.²⁵ In a strongly hierarchical work environment, another positive outcome may have been the creation of new forums for discussion and collaboration, beyond professions or status.¹¹ Despite these positive aspects, long-term care facilities in Quebec were unprepared. In a strong context of late action (or “inaction”) in these facilities,¹⁸ reaction strategies mainly emerged from HHR initiatives responding to unmet needs. This might have been due to a late realization on the part of the CISSS of its responsibility toward certain clientele in peripheral facilities, i.e., very distant from central governance. This highlights a lack of consideration for the organizational complexity inherent in the CISSS’s centralized and integrated structure,²⁶ as well as a possible culture of differentiation in care, in which hospital care is assigned greater value compared to other facilities. The trade-off, established to protect one sector (acute care) over another (long-term care facilities), might be a consequence of the aforementioned structure and culture, reflecting a broader societal phenomenon (i.e., “agisme systemique”²⁷: lack of consideration for elder people during the COVID-19 crisis).

In the end, this pandemic provided many lessons for healthcare systems on new processes to be preserved, requiring real culture change.²⁸ In Quebec, as in France and Brazil,¹⁴ innovative collaborations and successful improvisations were seen.²⁹ However, there is a need for more transversal communication and stronger integration of certain services or processes, such as IPC. The pandemic also highlighted significant disparities (between facilities, services, clientele, etc.) within the CISSS structure, as well as possible inequalities between CISSSs themselves, particularly in the distribution and management of supplies and other stocks. Thus, this pandemic seems to have revealed preexisting issues in the health care system, as seen in other countries.^{30,31} Ultimately, health care workers’ strong engagement, whether voluntary or compulsory, seems to have enabled the facilities to show resilience, while at the same time putting workers’ wellbeing at risk.⁹ Similar

studies on resilience have likewise emphasized the centrality of HHR resources in organizations’ experience of resilience in face of crisis,^{32–34} more than organizational structures or routines.²¹ Studies on resilience all point to structural and contextual issues limiting the capacity for resilience, such as the chronic issue of insufficient HHR retention in the public system.³ Without the sustained development of a certain “power to act” for facilities and HHR, which was in a sense provisionally allowed during this crisis, the preexisting organizational constraints could persist and impede the durability of positive changes or effects brought about by the resilience activated during this pandemic.²³

Limitations

This research built on a single case study of one integrated health and social services center, which has some inherent limitations on generalizability. Perception bias, the limited number of respondents, and the specific time frame of the study (first and second waves of the pandemic) might limit the generalizability of these findings to other settings. Also, our conceptual framework relied on a relatively mechanistic perception of crisis management, which may have restricted our analysis of a dynamic phenomenon. Other determinants, such as organizational culture or the cumulative effects of earlier reforms on HHR working conditions,¹⁷ might have added complexity to the analysis and are not considered here. Lastly, as the pandemic continues to impact hospitals and the health and social services system, some temporal distance will be necessary to draw conclusions on the system’s resilience.

Conclusion

Like other studies, our analysis reinforces the hypothesis that Quebec’s recent health reforms limited the system’s resilience.^{3,4} By reinforcing a highly centralized governance, those reforms created a certain administrative and institutional heaviness that may have limited configurations adopted to face the crisis and led to a lack of anticipation, or even some situations of “inaction” in the system. At various levels, the pandemic revealed preexisting inequalities between facilities or services, as well as between clientele, which are difficult to grasp through the concept of resilience.³³ Hospital research should therefore incorporate a broader health system perspective, considering sustainability of systems beyond crisis management. As well, leadership styles¹⁸ and work culture¹⁷ should be considered as important variables for the sustainability of healthcare system.

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