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Assessing cost and cost savings of teleconsultation in long-term care facilities: a time-driven activity-based costing analysis within a value-based healthcare framework

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Abstract

Background Quebec's healthcare system faces significant challenges due to labour shortage, particularly in long-term care facilities (CHSLDs). The aging population and increasing demand for services compound this issue. Teleconsultation presents a promising solution to mitigate labour shortage, especially in small CHSLDs outside urban centers. This study aims to evaluate the cost and cost savings associated with teleconsultation in CHSLDs, utilizing the Time-Driven Activity-Based Costing (TDABC) model within the framework of Value-Based Healthcare (VBHC).

Methods This study focuses on CHSLDs with fewer than 50 beds in remote regions of Quebec, where teleconsultation for nighttime nursing care was implemented. Time and cost data were collected from three CHSLDs over varying periods. The TDABC model, aligned with VBHC principles, was applied through five steps, including process mapping, estimating activity times, calculating resource costs, and determining total costs.

Results Teleconsultation increased the cost per minute for nursing care compared to traditional care, attributed to additional tasks during remote consultations and potential technical challenges. However, cost savings were realized due to reduced need for onsite nursing staff during non-eventful nights. Overall, substantial savings were observed over the project duration, aligning with VBHC's focus on delivering high-value healthcare.

Conclusions This study contributes both theoretically and practically by demonstrating the application of TDABC within the VBHC framework in CHSLDs. The findings support the cost savings from the use of teleconsultation in small CHSLDs. Further research should explore the long-term sustainability and scalability of teleconsultation across different CHSLD sizes and settings within the VBHC context to ensure high-value healthcare delivery.

Keywords Time-Driven activity-based costing, Value-based Healthcare, Teleconsultation, Long-term care facilities, Nursing care

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Background

The labour shortage in Quebec's healthcare industry represents a significant challenge for the healthcare system. Quebec-based data indicate that, at the end of 2022, there were over 40,000 vacant healthcare positions, representing a 13.5% increase over 2021 [1]. In the wake of the COVID-19 pandemic, which highlighted the critical lack of staff, specifically in the province's long-term care facilities (CHSLDs) [2], all healthcare facilities remain vulnerable to the labour shortage.

In addition to this shortage, older adults' need for residential and long-term care services is growing. In the second quarter of 2023, 4,192 people were waiting for a bed in a CHSLD [3]. Population ageing is a major contributing factor to the pressure exerted on the healthcare system. Increasing life expectancy and declining birth rates are leading to a growing proportion of older adults in the population.

Faced with a significant imbalance between the supply of long-term care services and the growing need for assistance, the lack of human resources constitutes a major challenge. New technology can partially offset the shortage of human resources, offering innovative solutions. With this in mind, the Ministère de la Santé et des Services sociaux (MSSS) in Quebec launched a pilot project in 2022. This project draws on teleconsultation with on-call nighttime nursing care in small CHSLDs outside major urban centres.

Utilizing teleconsultation appears to be a promising initiative to mitigate the lack of human resources and ensure the presence of a nurse at all times [4]. However, healthcare managers are required to make major decisions regarding the integration of this new technological tool, and they need data demonstrating the impact of this solution on residents. Using an evaluation model that can analyse the impact of innovations to improve decision-making is essential to assessing the effectiveness and impact of nighttime teleconsultation in CHSLDs.

According to the value-based healthcare (VBHC) model developed by Porter and Lee, measuring outcomes and costs for each patient is an integral part of providing high-value healthcare [5]. Developing appropriate indicators is essential to assessing the relationship between invested resources and health outcomes, by setting standards, objectives, or benchmarks. This helps to measure and compare the results with expected outcomes, and to make informed decisions. The use of costing methods is especially important when assessing the gap between the ideal care and services pathway and the actual pathway. Costing makes it possible to determine whether resources are being used effectively and efficiently. The model recommended by the authors for this type of costing is time-driven activity-based costing (TDABC) [6].

This study aims to examine how costing methods can be applied to a CHSLD-based care pathway to meet the information-related needs of healthcare managers.

Review of the literature on TDABC

TDABC uses time to determine the cost of resources and calculate the cost of care pathways [7]. The model "uses of time equations to model these indirect costs as if they were direct costs" [8]. According to Kaplan (2014), one of the founders of this method, application of TDABC offers many opportunities for healthcare managers, namely enhancing efficiency, optimizing the use of resources, optimizing care along the entire pathway, planning resource capacity and budgeting.

TDABC has been applied to several care and services pathways in various areas of healthcare. For example, it has been used in studies on care pathways in surgery, oncology, cardiology, mental health, rehabilitation, and teleconsultation [9–13]. These studies have shown that TDABC can be an effective activity-costing method throughout the care pathway, providing valuable information to manage costs and improve departmental efficiency [9–11].

Several studies have shown that the TDABC model facilitates the costing of different care pathways or healthcare departments [8, 10, 11, 14]. Some studies have also compared care pathways by analysing costs according to different models. The results show that TDBAC is, among other things, more accurate than the activity-based costing method [15]. Other studies demonstrate its potential for optimizing care pathways [9, 16–18], by identifying areas of waste and improving resource allocation to reduce costs. Finally, some studies highlight the potential of applying the TDABC method to inform governments about healthcare funding [12, 16, 19, 20].

As the literature review did not show any studies on the application of TDABC in Quebec's CHSLDs, this study focused on two specific objectives:

i. To explore the application of TDABC to a care pathway in CHSLDs, in order to compare the costs associated with the use or not of teleconsultation.
ii. Determine the overall cost savings resulting from the use of teleconsultation as part of the pilot project.

Methods

Choice of evaluated care pathways

The study focused on CHSLDs with fewer than 50 beds located in a semi-remote and a remote region of Quebec, where teleconsultation for nighttime nursing care was being considered. Our data were collected in three CHSLDs for periods of 4, 5, and 8 months, respectively.

Research team members met with stakeholders in these facilities to determine the best care pathway for this study. A care and services pathway is specific to each user and depends on their initial condition, their environment, and whether their illness is chronic [21]. CHSLDs are faced with a wide variety of care and services pathways to treat residents' different medical conditions and health issues. These care pathways include treatment for heart failure and major neurocognitive disorders, such as Alzheimer's disease. Falls are also a significant concern due to the frailty of residents and their mobility issues.

In addition to these specific examples, CHSLDs deal with situations where residents show deteriorating vital signs or experience changes in their functional status. Although residents experience a variety of clinical situations, it was determined that each situation is subject to a common care protocol. Therefore, we were able to determine a care pathway comprising two types of clinical situations, namely, urgent and non-urgent.

Application of TDABC

TDABC in healthcare is achieved through a series of steps [22–28]. As shown in various studies, authors sometimes provide more or less detail about these steps. Some authors mentioned 3 steps, others included 4, 7, 8, or 10. Sometimes, authors chose to detail or to summarize the model, presenting more or fewer steps; other times, authors decided not to apply the model in its entirety. For this study, we summarized the model into five different steps:

1. Develop a care process map, detailing each of the activities along the care pathway and determining the different resources involved;
2. Estimate the time required for each of the activities in the process map;
3. Calculate the unit cost by resource group, estimating their direct costs and practical capacity;
4. Allocate the costs of other direct resources such as medical supplies;
5. Calculate the total cost of the care pathways.

Generally, Step 3 of TDABC also requires the allocation of indirect resources, i.e., overhead such as administrative salaries, maintenance costs, electricity costs, and support staff [29]. A number of studies have shown that the allocation required by TDABC is complex [15, 27, 30], as it requires a great deal of time to determine all the indirect costs, and the application of time as a driver of these costs is not always appropriate [29]. As the research was carried out in a long-term care setting where overhead costs are incurred whether or not patients have clinical problems, and therefore, irrespective of whether there is a care pathway, this study did not take these costs into account.

Care process mapping

The care process map was created by the research team after meeting with the care pathways' main stakeholders. This map was validated by all the managers of the CHSLDs taking part in the study. The research team concurrently identified the resources required to carry out all the process's activities. Figure 1 shows the care pathway process map, using teleconsultation for urgent and non-urgent clinical situations, while Fig. 2 shows the process map for all types of clinical situations, without teleconsultation. The interviews also enabled the team to identify the resource groups that were directly involved in care pathways.

Once the activities had been validated, after each clinical situation involving teleconsultation, the clinical teams completed a form estimating the time required to perform these activities (see supplementary file). A total of 19 clinical situations with teleconsultation, and 14 comparative situations without teleconsultation, were identified by teams in the two regions participating in the project. The research team chose to use the actual time required for each of these situations to calculate the cost of each care pathway and then calculate the average cost of similar situations, namely:

I. Non-urgent clinical situations that did not require travel; 12 situations out of a total of 19;
II. Urgent clinical situations that did not require travel; two situations out of a total of 19;
III. Urgent clinical situations requiring travel; five situations out of a total of 19.

Determining cost per minute

As mentioned above, the costs associated with clinical situations are mainly related to direct labour. To calculate the unit cost of the practical capacity of these resources, we need the actual cost of the resources as well as their practical capacity in hours.

To determine the cost of resources, we collected salary-related data for each of the employees working on the clinical situations; this amount included benefits. The practical capacity of human resources was determined by taking employees' total working time and excluding the time when these employees were not at work, such as time for breaks, holidays, and training. Therefore, in this study, the practical capacity represents 82% of the total actual capacity, which is in line with the TDABC method [6]. All this data was extracted from the internal financial management system of the CHSLDs participating in the study.

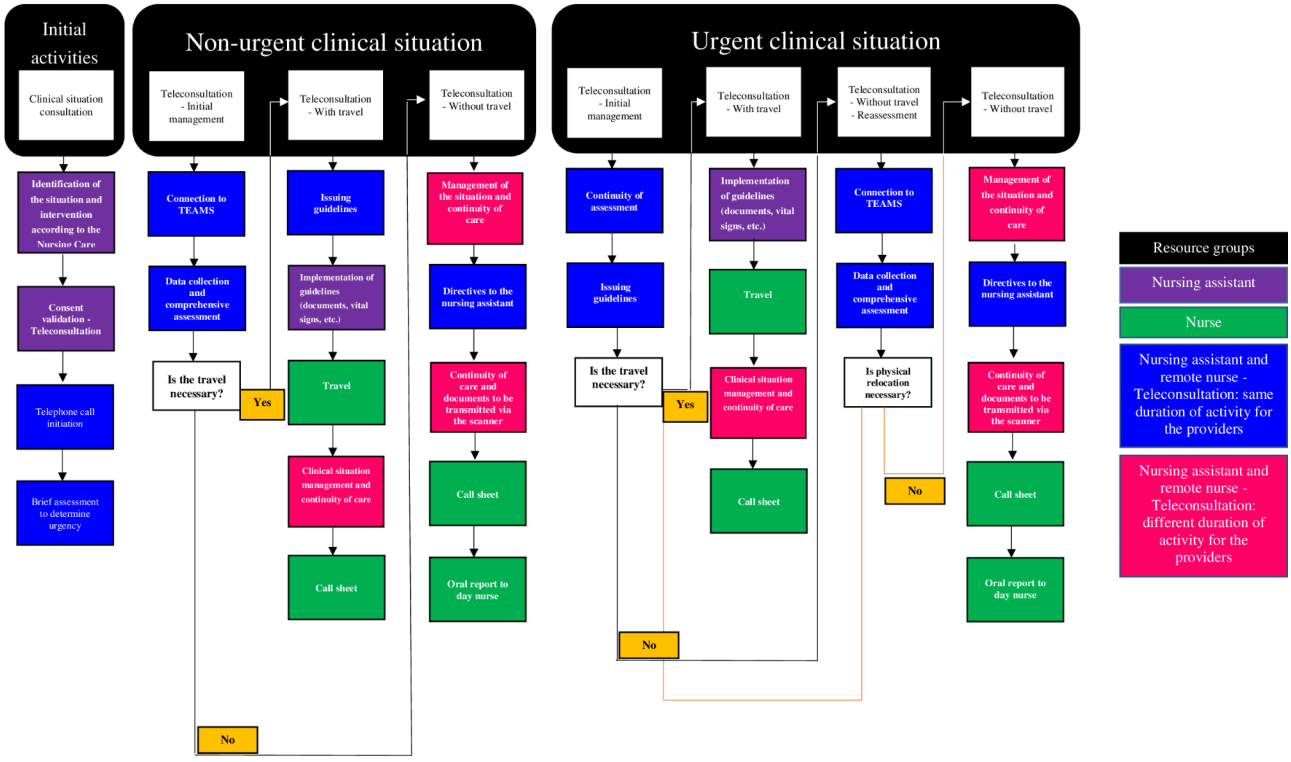

Fig. 1 Process mapping of clinical situations with teleconsultation

Finally, the cost of equipment acquired exclusively for the project was taken into account. Evaluation of the practical capacity used in the calculations represents 85% of the total actual capacity utilization of this equipment during night shifts over its entire useful life [29].

Results

Table 1 shows the cost per minute of the various human resources involved in the care episodes, as well as the cost per minute of the equipment directly attributable to the project.

Although we have identified four human resource groups in Figs. 1 and 2; Table 1 only shows results for the nursing assistant and the nurse. Data from these two resource groups enabled us to calculate the cost per minute of the other two resource groups. Namely, the combination of nursing assistants' and nurses' data related to teleconsultation activities, when the duration of the activity was the same for each of them, and the combination of the nursing assistants' and the nurses' data related to teleconsultation activities when duration differed.

In addition, to implement the teleconsultation pilot project for nighttime nursing care in CHSLDs, the facilities had to acquire appropriate equipment such as laptops, iPads, mobile phones, remote access tokens, and digital stethoscopes. The cost per minute of this equipment is shown in Table 1.

Table 2 begins by presenting the total costs of the first three scenarios related to the care pathway of a CHSLD resident's clinical situation, using nighttime teleconsultation with a remote nurse. Results were calculated using the TDBAC model and without taking into account the premiums related exclusively to the project, as these were evaluated later. This facilitated the comparison with the clinical situations that did not use teleconsultation.

We can see that, based on the TDABC model, the cost of a clinical situation with teleconsultation, varies between $104.15 and $283.69.

Table 2 then shows the total cost of the same situations without teleconsultation. It should be noted that for Region A, it was not possible to calculate all of the different scenarios due to a lack of data on the time required to address these clinical situations. In addition, no equipment was included, as the facilities used basic equipment that was not mentioned in Table 3. No new equipment was acquired for clinical situations without teleconsultation.

According to the TDABC model, the cost of a clinical situation without teleconsultation ranges from $76.82 to $165.60.

Therefore, the additional cost of adding teleconsultation is:

- $82.18 for a non-urgent clinical situation without travel in Region A and $24.43 in Region B;

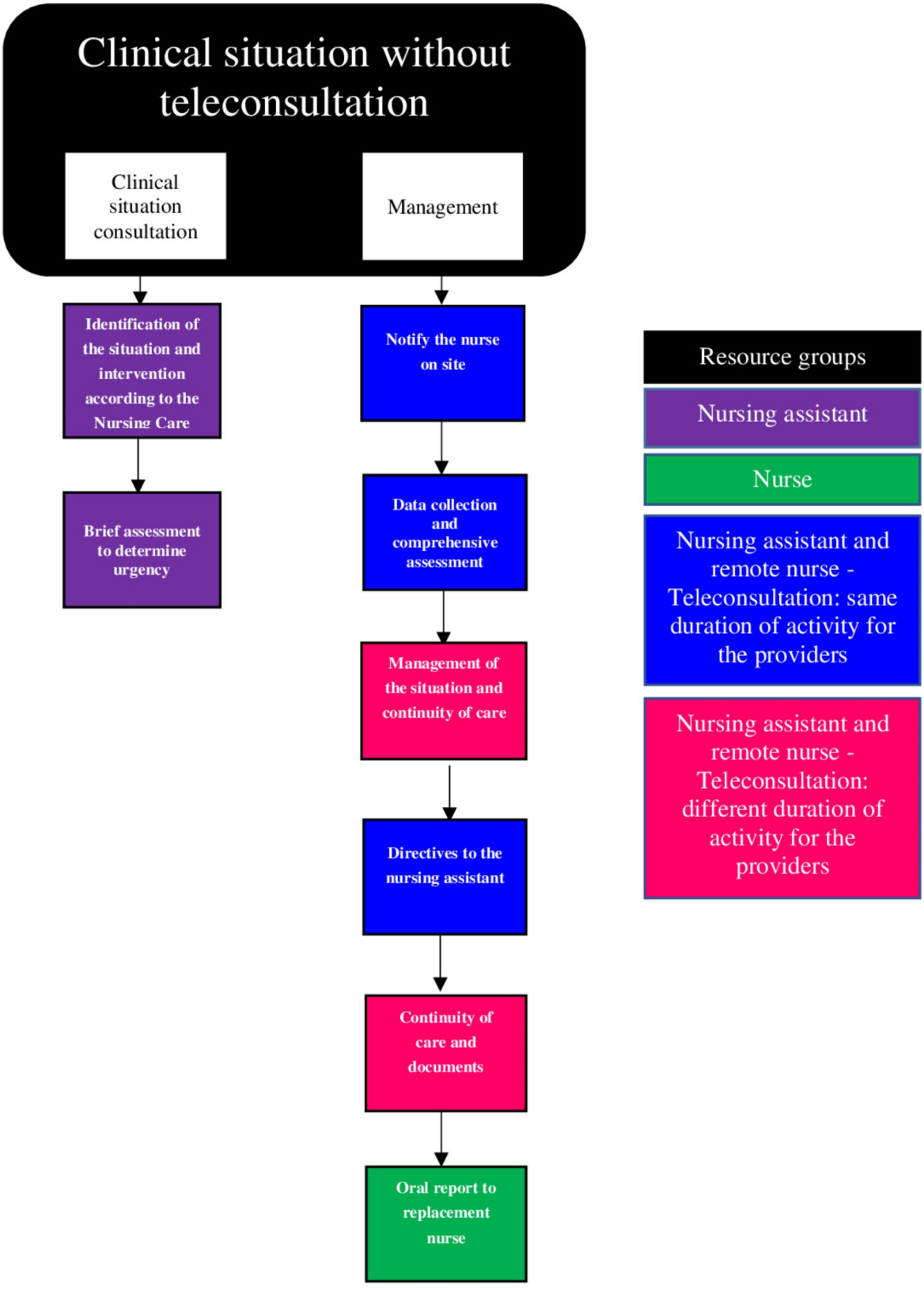

Fig. 2 Process mapping of clinical situations without teleconsultation

Table 1 Cost per minute of human resource groups working directly on care episodes and of equipment directly attributable to the project

	Nursing assistant (Region A)	Nurse (Region A)	Nursing assistant (Region B)	Nurse (Region B)	Equipment (Region A)	Equipment (Region B)
Cost of human resources or equipment	$140,522	$445,878	$819,922	$511,800	$30,592	$7,391
Practical capacity of resources in minutes	127,897	274,513	804,793	410,300	594,048	594,048
Cost/Practical capacity = Cost per minute	**$1.10**	**$1.62**	**$1.02**	**$1.25**	**$0.05**	**$0.01**

Table 2 Total costs of clinical situations with and without teleconsultation under different scenarios

	Non-urgent clinical situation		Urgent clinical situation			
	Without travel		Without travel		With travel	
	Region A	Region B	Region A	Region B	Region A	Region B
Direct human resource costs - with teleconsultation	$154.45	$107.21	$275.46	$103.00	$108.88	$185.17
Direct equipment-related costs - with teleconsultation	$4.55	$1.20	$8.23	$1.14	$2.57	$4.23
Total cost of the care pathway with teleconsultation based on the TDABC model	**$159.00**	**$108.47**	**$283.69**	**$104.15**	**$111.45**	**$189.40**
Total cost of the care pathway without teleconsultation based on the TDABC model	**$76.82**	**$84.04**	**N/A**	**$99.01**	**N/A**	**$165.60**

Table 3 Calculation of overall savings related to the pilot project

	Total costs for both facilities
Total costs if the nurse had been present. Calculation based on the average cost of nurses.	$129,750
Total actual costs of on-call bonuses paid to nurses and licensing fees during the teleconsultation project	$16,407
Overall savings across the duration of the project	**$113,343**
Initial non-recurring costs	**$25,059**

- $5.14 for an urgent clinical situation without travel in Region B; and.
- $23.80 for an urgent clinical situation with travel in Region B.

Discussion

Theoretical and practical contributions

This study makes both theoretical and practical contributions. First, on the theoretical level, it fosters understanding of the TDABC model's application in a long-term care facility. The literature review revealed that no study had applied this costing method to a care pathway in a CHSLD or to its equivalent inside or outside the province of Quebec. Through this study, we modelled a resident's care pathway in a CHSLD using teleconsultation with a remote nurse. We also calculated the cost of all possible care pathway scenarios for different clinical situations using the TDABC model, in addition to calculating the costs of pathways specific to the nursing care teleconsultation pilot project in small CHSLDs.

Our study is the first to model the care pathway of a CHSLD resident using teleconsultation and to provide detailed cost calculations based on the TDABC framework. This contributes to the growing body of knowledge on cost accounting methods in healthcare, particularly in sectors that are increasingly turning to technological solutions to address workforce shortages and optimize care delivery. The findings underscore the versatility of TDABC as a tool for understanding and managing healthcare costs, demonstrating its applicability beyond traditional hospital settings and into long-term care facilities.

On a practical level, this study will enable the MSSS to gain a clear understanding of the cost composition of a care pathway in CHSLDs using teleconsultation. Thus, it will help guide managers' decision-making in care settings and foster the improvement of interventions using teleconsultation for nighttime nursing care in CHSLDs. In addition, the study provides relevant data to support final decision-making regarding the possible adoption of teleconsultation for nighttime nursing care as a new standard in remote CHSLDs with fewer than 50 residents. Our findings highlight that while teleconsultation incurs additional costs compared to traditional care pathways, these costs are relatively modest, especially when considering the potential benefits such as enhanced access to care, reduced travel needs for urgent care situations, and improved resident outcomes.

Healthcare managers can leverage the detailed cost information provided by the TDABC model to make informed decisions about resource allocation and investment in teleconsultation. By understanding the specific cost components associated with teleconsultation,

managers can identify areas where efficiency gains can be achieved, such as optimizing the use of equipment or refining the care process map to reduce unnecessary activities. Additionally, the model allows for a more precise comparison between different care pathways, enabling managers to assess the cost-effectiveness of teleconsultation relative to other care delivery methods.

Implications for healthcare policy

The findings of this study also have important implications for healthcare policy, particularly in the context of funding models for long-term care facilities. The detailed cost analysis provided by the TDABC model can inform government decisions regarding the allocation of resources to CHSLDs, particularly in regions facing significant workforce shortages. By demonstrating the cost structure of teleconsultation-based care pathways, this study provides evidence that can be used to advocate for targeted funding to support the adoption and scaling of teleconsultation technologies in CHSLDs. This is particularly relevant as Quebec's healthcare system continues to grapple with the dual challenges of an aging population and a persistent labour shortage.

Moreover, the study's findings can serve as a basis for developing standardized costing practices in long-term care, contributing to more consistent and transparent healthcare funding across the province. Policymakers can use this information to design incentive structures that encourage the adoption of cost-effective care models, such as teleconsultation, which can alleviate some of the pressures on the healthcare system while maintaining or improving the quality of care provided to residents.

Limitations and future research

This study also has limitations. First, the small sample of data collected from only two facilities may affect the quality of the standard time per activity within the care pathway. In addition, the lack of homogeneity between residents makes the application of the TDABC method more complex. Care teams deal with residents suffering from loss of autonomy, multiple chronic illnesses, cognitive disorders, or physical disabilities. Therefore, the time allocated to each activity can vary greatly from one care pathway to another.

Following this pilot project, it would be relevant to pursue further research. It was conducted over a relatively short period, less than a year for both facilities. Extending the evaluation period would enable the collection of more data on the effectiveness of teleconsultation over time. In addition, it would be relevant to extend the project to several other facilities to take into account the various realities of the healthcare system. This would enable verification of whether the savings and benefits of teleconsultation are constant or whether they vary according to the geographical location and demographics of the population served by the facilities.

Also, as the project initially targeted small CHSLDs, it would be relevant to apply the same approach in CHSLDs with a larger number of residents to determine whether the achievable savings are as significant in these facilities. Expanding the pilot project to medium and large CHSLDs is important to understand whether it is possible to achieve the same savings on a larger scale. This may help determine whether teleconsultation is scalable and suitable to these CHSLDs, which may have significant implications for the healthcare system as a whole.

Finally, the project made it possible to analyse several different clinical situations in the two facilities. However, in total, fewer than 20 clinical situations were reported as part of this pilot project. It would be useful to analyse a larger number of different clinical situations in order to group them together and verify whether there is a correlation in terms of the time required to carry out activities as part of these clinical situations.

Conclusions

The time measurements and costing analysis indicate that during the pilot project, clinical situations involving teleconsultation were costlier than those without, even excluding the premiums directly associated to the pilot project. Several factors explain why clinical situations took longer and were therefore costlier when they included teleconsultation.

First, it should be noted that time was documented for 19 clinical situations, which is a fairly small number, and the sample was rather varied in terms of the type of clinical situation. This may explain certain differences between the times required to address clinical situations.

Second, remote work necessitates that both the nurse and the nursing assistant perform a greater number of tasks, sometimes simultaneously. The process mapping of clinical situations with teleconsultation (Fig. 1) illustrates the additional tasks required compared to those without teleconsultation (Fig. 2).

Furthermore, when the nurse provides teleconsultation services and travel is necessary due to a resident's condition, travel time vary significantly based on the distance between the remote nurse and the facility. This time is obviously not a factor when the nurse is on-site, impacting the total time and cost of each clinical situation.

Finally, people experienced some challenges when connecting to TEAMS, the software that enables remote teleconsultation. During one of the 19 clinical situations, connection was difficult and it took 30 min to access the TEAMS platform. This certainly increases the amount of time involved in the teleconsultation care process, as well as the costs associated with each teleconsultation.

Analysis of the average cost of nurses

While we can say that managing a clinical situation with teleconsultation takes longer, and is costlier, than a situation without teleconsultation, this measurement alone does not provide a comprehensive assessment of the additional costs or savings associated with teleconsultation. This is because, during a shift, teleconsultation is not always required. The basic premium corresponds to approximately one hour's salary. Then, if the nurse must travel, a minimum of three hours' remuneration is paid at an overtime rate which represents one and a half times the basic rate, regardless of travel time. If the nurse must be present for more than four hours, they will be paid double time for the entire time that they are on-site. Finally, if the nurse is not required to travel, in addition to the premium, they will receive a supplementary amount equal to the duration of the call paid at the overtime rate, which represents one and a half times the basic rate. Thus, we can conclude that if the nurse does not receive a teleconsultation request during their night shift, the CHSLD saves the equivalent of seven hours of wages, i.e., an eight-hour unpaid shift minus the hour of wage premium related to the nighttime nursing shift for the project.

Considering that a nurse's actual daily salary is $540.16, on average, in Region A and $407.74 in Region B, and comparing these average salaries to the total costs of the clinical situations with teleconsultation presented in Table 2, we can see that the cost of a shift is much higher than the cost of a care pathway with teleconsultation, whether the nurse must travel or not.

With teleconsultation, the CHSLD would not have to pay the nurse's entire wage if there were no events during the night. Considering the average value of on-call premiums, if one or more events occur during the night, a minimum of 3.7 teleconsultations without travel and 1.6 teleconsultations with travel would be required before the situation becomes less profitable for the MSSS in Region A. In Region B, the breakdown is 5.7 teleconsultations without travel and 1.4 teleconsultations with travel.

Overall savings

We calculated the overall savings for both regions by considering the number of nights without teleconsultation compared with the total number of clinical situations in all three CHSLDs and the premiums paid to nurses during the project. Table 3 reveals that significant savings following the use of teleconsultation.

During the project, a total of 276 night shifts had access to teleconsultation, but only 19 clinical situations required it, resulting in actual savings of over $113,000 after initial training and capital costs of just over $25,000. Thus, the project's savings were substantial relative to its duration.

Strategic insights for healthcare policy

The pilot project's findings emphasize the need for a nuanced understanding of teleconsultation's cost implications. While initial costs may be higher due to the complexity and additional tasks involved, the long-term savings and benefits, particularly in reducing unnecessary night shift expenses, are substantial. The experience gained from this pilot project provides valuable insights for future teleconsultation implementations, highlighting the importance of addressing technical challenges, optimizing task distribution, and understanding the cost dynamics in different regions.

Ultimately, the pilot project not only demonstrated the feasibility of teleconsultation but also its potential to significantly reduce costs while maintaining quality care. As teleconsultation technology and processes improve, the cost-effectiveness of such initiatives is likely to increase, making it a viable option for healthcare facilities aiming to optimize resource use and enhance resident care. The integration of these findings into health policy discussions is important to ensure that the benefits are maximized, and that the implementation of teleconsultation contributes to more sustainable healthcare delivery in the long term.

Impact on the Quebec healthcare system

The findings from this pilot project have significant implications for the broader Quebec healthcare system. The implementation of teleconsultation services in CHSLDs could substantially improve access to healthcare for residents, particularly during nighttime hours when staffing is typically reduced. By providing remote access to skilled nursing care, teleconsultation can ensure that residents receive timely medical attention, potentially reducing the need for emergency transfers and hospital admissions.

In terms of scalability, the results suggest that teleconsultation could be widely implemented across Quebec's CHSLDs, leading to significant savings for the healthcare system as a whole. If this service were implemented across the province, thousands of consultations could be conducted remotely, alleviating some of the burden on in-person nursing staff and reducing the strain on emergency services. This would not only enhance the accessibility of healthcare services for residents but also contribute to a more efficient allocation of healthcare resources.

The reduction in unnecessary travel and on-site staffing costs could translate into substantial savings for the Quebec healthcare system, freeing up resources that could be reinvested in other areas of need. Moreover, the successful implementation of teleconsultation could serve as a model for other regions facing similar challenges, further expanding its impact.

Policy considerations

While the initial costs of teleconsultation may be higher due to the complexity and additional tasks involved, the long-term savings and benefits are substantial, particularly in reducing unnecessary night shift expenses. The experience gained from this pilot project provides valuable insights for future teleconsultation implementations, highlighting the importance of addressing technical challenges, optimizing task distribution, and understanding the cost dynamics in different regions.

Ultimately, the pilot project not only demonstrated the feasibility of teleconsultation but also its potential to significantly reduce costs while maintaining quality care. As teleconsultation technology and processes improve, the cost-effectiveness of such initiatives is likely to increase, making it a viable option for healthcare facilities aiming to optimize resource use and enhance resident care. Furthermore, the broader implementation of teleconsultation could play a critical role in addressing the current challenges facing the Quebec healthcare system, improving access to care, reducing the burden on healthcare providers, and leading to more sustainable healthcare delivery in the long term.

Abbreviations

CISSSO	Centre intégré de santé et des services sociaux de l'Outaouais
CHSLD	Long-term care facilities
MSSS	Ministère de la Santé et des Services sociaux
TDABC	Time-driven activity-based costing
VBHC	Value-based healthcare

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12913-024-11578-9.

Supplementary Material 1

Supplementary Material 2

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Author contributions

V.N. and V.P. authors have seen and approved the submission of this paper to your journal. V.N. is the Principal Investigator; she conceived the study and secured funding, and led all aspects of this study. V.N. and V.P. were involved in the concept and design, and wrote the first draught of the manuscript. V.P. was responsible for data collection and, V.P. and V.N. conducted the data analysis. Both authors contributed to the manuscript revisions, and approved the final manuscript.

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Data availability

The data support the findings of this study are available from the Ministère de la Santé et des Services sociaux (MSSS) in Quebec, but restrictions apply to the availability of these data, which were used under licence for the current study and so are not publicly available. The data are, however, available from the authors upon reasonable request and with the persmission of the Ministère de la Santé et des Services sociaux (MSSS) in Quebec.

Declarations

Ethics approval and consent to participate

Ethical approval has been obtained from the Research Ethics Committee of the Centre intégré de santé et des services sociaux de l'Outaouais (ref. number 2022 – 353_195_MP) in Quebec, Canada. All methods were carried out in accordance with the relevant institutional guidelines and regulations. All the participants gave informed, written consent to participate, and interviewees were sent the interview questions in advance, allowing them time to consider their viewpoints. A copy of the interview guide can be found as a supplementary material.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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