Research

Public perceptions of the cost of paramedic services in Saskatchewan, Canada

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<https://doi.org/10.33151/ajp.18.889>

Abstract

Introduction

Despite the increasingly important role of paramedics in Canada's healthcare system, the Canadian Health Act does not cover paramedic services. Anecdotal evidence indicates that the cost of paramedic services prevents many people in need from accessing this care. This article explores public perceptions of the cost of paramedic services in Saskatchewan, Canada.

Methods

Using a qualitative research design, we collected data from 56 participants in focus group sessions and semi-structured interviews designed to explore perceptions of paramedic services in Saskatchewan.

Results

The data indicated that participants perceived the cost of paramedic services to be too high, and that this perception may limit the use of paramedic services during medical emergencies. The data also suggested a lack of understanding of how paramedic service costs are calculated. Overall, participants expected the government to do more to subsidise these costs.

Conclusion

The results revealed a disconnect between public perceptions about the cost of paramedic services and the initiatives designed by the provincial government to alleviate these costs. They also highlight the need for better public education about and access to government programs designed to alleviate the cost of paramedic services.

Keywords:

cost of paramedic services; framework approach; paramedic; public health policy; Canada; Saskatchewan

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Introduction

Paramedic services dispense pre-hospital treatment and transport for potentially life-threatening injuries or illness. These public services are critical to emergency health care delivery in countries around the world. In Canada, paramedics provide several community services, including emergency interventions to mitigate morbidity associated with injury or illness; non-urgent, primary, and preventative care; and health education (1,2). Unlike the Franco-German paramedic model in which physicians staff ambulances for direct admission to hospital wards (3,4), Canada follows the Anglo-American model in which professional paramedics staff ambulances and administer treatment while ensuring safe transport to an emergency department. In Canada, this model has evolved to include primary, preventive and chronic health care delivery (5-7).

The Canada Health Act is the flagship federal legislation that establishes a framework for provinces and territories to obtain federal cash contributions for insured health services, which in turn minimises residents' financial barriers to health services (8). Despite the critical role paramedics play in health care delivery in Canada, the Canada Health Act does not include paramedic services in its list of insured health services. Instead, insurance coverage of paramedic services relies on a patchwork of legislation at the provincial level of government. Consequently, unlike most health services, users cover the costs of paramedic services in most provinces. The growing importance of paramedic services to health care delivery in Canada and the lack of coverage for such care has raised concerns that those in need may not be able to access this service (9,10).

Some studies have examined public perceptions of the cost of paramedic services. Crowe et al (11) assessed the experience and perception of paramedics in the United States and found that most participants (85.3%) who were billed for paramedic services believed that the service was worth the cost. They did not explore whether participants were aware of the costs of paramedic services before calling, the impact of this knowledge on the decision to call the paramedics, or whether the demographic profile of participants influenced perceptions of cost. Moreover, the study design used landline telephone numbers, which researchers noted could have skewed the sample towards white, older, educated and conservative respondents (11). These participants likely could afford insurance coverage for paramedic services, thus influencing their perceptions of the costs. Blomstedt, Nilsson and Johansson (12) investigated public use, knowledge and expectations of paramedic services in Skane, Sweden, although they did not address public perceptions of cost. As part of a larger study examining public perceptions of paramedic care in Saskatchewan, this study aimed to assess public perceptions of the costs of these services and how those perceptions affect the use of emergency services among various groups.

Methods

Study design

This study employed a qualitative descriptive research design (13,14) to explore public perceptions and experiences related to paramedic care in Saskatchewan. This approach allows for complexity and nuance in data collection, analysis and interpretation and thus facilitates in-depth understanding of patient experiences (15). We conducted data collection and analysis concurrently using the framework approach, an applied qualitative research method developed in the 1980s by Ritchie and Spencer (16). This systematic and transparent method of evaluating qualitative data in applied policy research comprises five distinct but connected stages: familiarisation, identification of a thematic framework, indexing, charting, and mapping and interpretation. The stages are non-linear and iterative, each one informing the next and looping back to the previous to establish a series of interconnected qualitative data management procedures, which can be used to create an audit trail (16). Interviews and focus groups were used to collect data. The semi-structured interview approach allowed for deep exploration and elaboration of answers (17,18). To aid in conducting these sessions, the research team consulted the literature to develop a focus group and interview guide. Before each interview and focus group session, demographic data (gender, age, race, location) were collected from each participant.

Participants

A combination of non-probability purposive sampling and snowball sampling was used to recruit key informants from different population groups (eg. seniors, inner-city residents, rural residents, new immigrants). To implement purposive sampling, the research team sent copies of the recruitment flier to community associations in Regina, Saskatoon and Prince Albert. This approach ensured that participants recruited for the study were Saskatchewan residents. Participants who received the flier and decided to participate contacted the researchers by telephone, who then informed them of the purpose of the study and their rights as participants.

During the telephone interviews, some participants indicated they had acquaintances who lived in Saskatchewan, had experience with paramedic services and were interested in interviewing for the study. The research team asked those participants to pass along the researchers' contact information, and telephone interviews were subsequently scheduled with these acquaintances using this snowball sampling technique. The study comprised 56 participants in focus groups and semi-structured individual interviews. Participant demographic information is shown in Table 1.

Procedures

Data collection occurred from November 2019 to September 2020. The project launched on 28 November 2019 with a focus group session in Regina comprising 13 participants, followed

Table 1. Participant demographic information

Participant #	Gender	Age (years)	Ethnicity	Location
1	Female	45-64	Caucasian	Regina
2	Male	18-24	Black/African	Regina
3	Female	25-34	Black/African	Regina
4	Female	35-44	East Asian	Regina
5	Male	18-24	Black/African	Regina
6	Female	25-34	South Asian	Regina
7	Male	45-64	South Asian	Regina
8	Male	45-64	South Asian	Regina
9	Female	45-64	Caucasian	Regina
10	Male	25-34	Black/African	Regina
11	Male	25-34	East Asian	Regina
12	Female	25-34	Black/African	Regina
13	Male	18-24	Black/African	Regina
14	Male	18-24	Black/African	Regina
15	Male	45-64	Indigenous	Regina
16	Female	45-64	Indigenous	Regina
17	Male	45-64	Indigenous	Regina
18	Male	25-34	Indigenous	Regina
19	Male	35-44	Indigenous	Regina
20	Male	35-44	Indigenous	Regina
21	Female	45-65	Indigenous	Regina
22	Female	45-65	Indigenous	Regina
23	Female	45-65	Indigenous	Regina
24	Male	35-44	Indigenous	Regina
25	Male	45-65	Indigenous	Prince Albert
26	Male	45-65	Indigenous	Prince Albert
27	Female	45-65	Caucasian	Prince Albert
28	Female	65+	Caucasian	Prince Albert
29	Male	45-65	Indigenous	Saskatoon
30	Female	35-45	Black/African	Regina
31	Male	35-45	Caucasian	Regina
32	Female	35-45	Caucasian	Regina
33	Female	35-45	Caucasian	Regina
34	Female	65+	Caucasian	Saskatoon
35	Female	65+	Caucasian	Saskatoon
36	Female	65+	Caucasian	Saskatoon
37	Male	35-45	Black/African	Regina
38	Female	65+	Caucasian	Saskatoon
39	Female	65+	Caucasian	Saskatoon
40	Female	65+	Caucasian	Saskatoon
41	Male	65+	Caucasian	Saskatoon
42	Female	45-64	Black/African	Regina
43	Female	35-45	Caucasian	Saskatoon
44	Male	45-64	Caucasian	Saskatoon
45	Female	45-64	Black/African	Prince Albert
46	Female	45-64	Caucasian	Regina
47	Male	35-45	South Asian	Regina
48	Male	35-45	Black/African	Saskatoon
49	Female	25-34	Middle Eastern	Saskatoon
50	Female	35-44	Middle Eastern	Saskatoon
51	Female	35-44	Middle Eastern	Saskatoon
52	Female	45-64	Caucasian	Regina
53	Female	35-44	First nation	First nation community
54	Female	35-44	Indigenous	Regina
55	Female	45-64	Indigenous	Que' Appelle
56	Male	25-34	Caucasian	Prince Albert

by a second focus group on 28 January 2020 in Regina with 10 people and a third on 9 March 2020 in Prince Albert with five participants. Focus group sessions lasted between 1 and 3 hours. Due to covid-19 pandemic travel restrictions in Saskatchewan in March 2020, the research team transitioned from the focus group format to individual, semi-structured telephone interviews. From April 2020 to September 2020, 28 such interviews were conducted, each lasting 30 to 60 minutes. In addition to recording field observations, the focus group sessions and interviews were audio recorded, transcribed verbatim and checked for accuracy before importing the data into NVivo 12 for analysis. Written informed consent was obtained from all participants before being interviewed and audio taped. Researchers informed participants that they could withdraw from the study at any time without negative consequences. To ensure confidentiality, all transcripts were assigned a code, and identifying information in transcripts and field notes was removed.

Data analysis

The framework approach was used to analyse the data. A post-doctoral researcher transcribed the data and the research team met weekly to review the transcripts and discuss preliminary codes. We then identified a thematic framework, which was essentially a collection of codes representing the research purpose. For example, we created individual nodes in NVivo to represent participants' experiences, expectations, and perceptions of paramedics in Saskatchewan, and these nodes formed the framework for indexing.

Indexing involved individual research team members reviewing transcripts and choosing whether to assign each line of the transcript to an existing node of the framework or to modify the framework to account for new ideas encountered in the data. Team members discussed these choices to validate interpretations and ensure inter-coder reliability. The final framework included many nodes that broadly represented each line of data from all transcripts. For example, the node 'cost of paramedic care' was used for any statements related to the financial cost of paramedic services. The results section discusses the data we indexed in this node.

Ethics

The University of Regina Research Ethics Board approved this study. Approval number REB# 2019-103.

Results

During data charting, mapping and interpretation, two themes emerged. First, most participants mentioned how the high cost of paramedic services in Saskatchewan led them to hesitate to use paramedic services, even in situations that could be interpreted as emergencies. This perception was especially prevalent among new immigrants, low-income earners and seniors. A

participant in the first focus group recounted how she chose not to use emergency services when she went into labour:

"I heard that the paramedics over here is very expensive. I still do not know how much they charge. So, when I was in labour, my husband's relative called 911, and I was like, there is no way I was paying \$400 to \$500 on an ambulance... but I still made him drive me all the way."

This woman's experience underscores how the perceived high cost of the service combined with the belief that her situation was non-life threatening played a critical role in her decision-making. Another male participant also recounted how cost considerations played a role in decision-making during emergencies:

"The only experience I have had directly was being transported from the general to the Pasqua hospital about 2 years ago. I should have called 911 to get me to the general hospital, but I did not. Maybe that is part of the issue here, is why would people not do something they should have done naturally, and why did I not do that? Even though it was in the middle of the night that I had my issue, a pulmonary embolism, it could have been fatal. You are reluctant to have people disturb the neighbourhood or be perceived as needing that kind of care, or even the impression of what is the cost going to be. So, let us just get into a car and drive to the hospital. I do not know how you get around that, but that is maybe one thing that the paramedic service needs to do, is to make it more acceptable to make use of the service."

This participant chose not to call an ambulance, despite the potential severity of his situation, because of the perceived expense. His experience highlights the dangers of allowing such public perceptions to influence decision-making during emergency situations.

Other respondents demonstrated how one's level of income and health insurance can influence perceptions of paramedic costs. For example, a participant noted that:

"Yeah, I am aware of the cost and no it does not play with me. If I need it, I need it and I pay for it. I am fortunate enough to have very good healthcare insurance as well. But even if I didn't, I would rather not risk my health and safety for an ambulance bill. It doesn't make a difference to me. No, I 100 percent think that the cost is okay and if they do make a profit, I don't think there is anything wrong with that either. It is a service and whether you go to work, earn your money, and run a business you have to sustain it and make a profit. It does not bother me."

In this case, the participant noted that he was aware of the cost of paramedic services and that cost considerations do not play a role in his decision-making when in need of an ambulance. He noted that he had good insurance coverage but that even if he did not have good coverage, he still perceived the costs to be appropriate. He reasons that like other services and businesses, paramedic services incur costs and need to make a profit to be sustainable. Hence, he perceived the costs of paramedic services in Saskatchewan to be appropriate. This participant's

position highlights the different perceptions of paramedic services in relation to the cost and suggests that factors such as individual insurance coverage and the perception of paramedic services as either a business or public service, plays a role in shaping perceptions of the costs.

However, even among those with insurance coverage for paramedic services, some still felt that the costs would affect their decision-making during medical emergencies. As one participant stated:

"I think the disincentive is the cost. Like if somebody has ever used an ambulance and knows how much it costs or has the knowledge about how much it costs, and then they will begin to weigh whether they should call an ambulance or whether they should just drive there. A neighbour could help me get to the hospital, depending on what kind of income bracket they find themselves. So, they may know, and I think people know when to call an ambulance, it is just that the cost might be a hindrance."

This participant characterises the perception of high cost as a hindrance to the use of paramedic services during emergencies. The same participant also indicated that income level plays a role in these perceptions, implying that wealthier individuals with insurance coverage would be less likely to consider cost in their decision to use paramedic services in a medical emergency, compared to more vulnerable populations in lower income brackets.

Another significant observation of the study was the lack of understanding about how paramedic costs are calculated and subsidised. This misunderstanding led to respondents hesitating to use the service, even when they recognised its value. As one focus group participant commented:

"Again, this concern about cost has come up a number of times. So, it seems to me, one thing that the facility or service can do is make it clear to the public in a general way through our journalists what the real costs are so it is not a concern. I do not know still what the charges would have been had I called the ambulance. But if I had known it would have cost nothing or little, then I might have been more accepting to give them a call."

The issue of cost arose several times during the focus group discussions. The statement about paramedic providers needing to make these costs clear to the public illustrates a general lack of understanding about these services in Saskatchewan. Further, the participant suggests that if people knew how affordable paramedic services are, they would be more likely to use them during medical emergencies. Another participant concurred:

"I have no personal experience except my relatives. My mother was flown by airplane from another city in Saskatchewan. So, I have nothing bad to say about them because they saved her life, and she lived another 6 years. Otherwise, they said she would have been dead within a few hours. She needed a heart... what do you call that, a pacemaker, immediately. The only thing I have, is this all covered by Saskatchewan healthcare or

not? I remember her insurance went sky high the next year because we have some private insurance too. So, I mean, she needed it, or she would have died, but I would be hesitant and think I would just get in the car and drive myself because I don't have a real good insurance plan. So, those questions I would like to know more about that. If it's covered and different components covered."

This participant did not know what aspects of paramedic services are covered by Saskatchewan public health care and thus felt unable to make an informed decision. Based on this and similar feedback, we drew three important observations from the data. First, most participants perceived the cost of paramedic services to be too high. Second, the data suggested a lack of understanding of how costs are calculated and who pays for the costs of paramedic services. Finally, Saskatchewan residents expect the government to do more to subsidise the cost of paramedic services in the province.

Discussion

This study explored public perceptions and expectations of paramedic care in Saskatchewan, Canada. We found that respondents in general perceived paramedic services in Saskatchewan to be expensive and thus might not use this service for some medical emergencies, such as those that seem non-life threatening. The data also indicated that public perceptions of the cost of paramedic services vary depending on the individual's insurance coverage, which is linked to income level. A corollary of this finding is that vulnerable populations (eg. low-income earners, new immigrants and some seniors) in Saskatchewan are more likely to think paramedic services are too expensive and thus might not access this care when needed. This lack of access is particularly worrisome, as vulnerable populations are more likely to have undiagnosed and chronic medical conditions (19). Misperceptions about the high cost of these services should be prioritised by health authorities to encourage appropriate use. Finally, the data also indicated that people want the government to do more to subsidise the cost of paramedic services in the province. These results highlight the need to ensure Saskatchewan residents are informed about and understand both the costs of and general conditions under which to call paramedics. This information plays a crucial role in real-time decision-making during emergencies and may increase the appropriate use of emergency services, such as for high-acuity illness and injury (eg. cardiac arrest) while discouraging its use for low-acuity illness and injuries.

As in other Canadian provinces, paramedic services are not an insured benefit in Saskatchewan (20). However, to alleviate the cost of paramedic services, the Ministry of Health of the Government of Saskatchewan provides partial funding to the Saskatchewan Health Authority to cover a significant portion of the cost of ground ambulances. The Ministry of Health also has several programs and policies to offset the costs of paramedic services for eligible residents. For example, the Ambulance Act codifies standards for all ambulance operators in the province,

including billing parameters, standards related to user rates and equipment, ambulance licenses, management of ambulance services and qualifications for ambulance attendants (21). The standard user rates protect against arbitrary billing practices and makes fees more understandable. That said, it would be unreasonable to expect members of the public to seek out legislation as a means of confirming paramedic service costing.

The Ministry of Health also has targeted programs to assist vulnerable populations, such as seniors and low-income residents, with the cost of paramedic services. For example, the Senior Citizens Ambulance Assistance Program subsidises the cost of ground ambulances for eligible Saskatchewan people aged 65 years and more, limiting it to \$135 for basic pick-ups within the province and providing coverage for inter-facility transfers. The Family Benefits or Supplementary Health Benefits programs for lower-income families subsidises the cost of paramedic services for low-income residents nominated by Social Services, and the Northern Medical Transportation Program provides coverage for air and ground ambulances to all northern residents (20). The Ministry of Health also developed a ground ambulance fee policy "to establish the maximum allowable rates to be charged by ground ambulance services based in Saskatchewan, for ground ambulance service" (22). This policy details the maximum allowable rate for basic pick-ups, a maximum kilometre charge and a waiting time charge. This policy helps ensure both public and private ambulance services in all operational zones charge the same rates to end users.

The results of our study indicate that many people in Saskatchewan are unaware of these programs and subsidies. Public education efforts should address this disconnect to ensure residents know about the various legislation and policies that can help regulate and even cover the costs of paramedic services, especially for vulnerable populations. This effort will help allay residents' fears and encourage appropriate emergency care. We also found that many participants were unaware of how the costs of paramedic services are determined or who pays for them. Public health researchers have identified public education and mass media campaigns as effective ways of raising public awareness and encouraging ambulance use during medical emergencies (23, 24). Given the importance of education, public health agencies should actively engage in campaigns to raise awareness about the cost of paramedic services and improve decision-making during medical emergencies. Developing partnerships between public health authorities and paramedic professional associations and community groups would facilitate public engagement and discourse by leveraging resources and social networks to raise public awareness about issues related to the cost of paramedic services.

Limitations

One important limitation of this study is that the focus group sessions did not afford ample opportunities for facilitators to

explore the circumstances under which participants would perceive the costs of paramedic services to be too high. Due to the average number of participants in the focus group sessions and the number of questions asked, participants did not have enough time to respond in detail, which limited our ability to obtain the type of rich data that could deepen our understanding of the focal issues. Future research could use smaller focus groups to encourage such discussions and yield data that can further explore factors influencing perceptions about the high cost of paramedic services in Saskatchewan.

Conclusion

The study explored public perceptions of the cost of paramedic services in Saskatchewan, Canada. The results indicate that many felt that paramedic services are too expensive. This perception prevented people from using this vital service in medical emergencies. The study findings also highlighted the need for coordinated public education campaigns to raise awareness about health legislation, programs and policies that mitigate the cost of paramedic services to ensure that all residents of Saskatchewan, including vulnerable populations, can avail themselves of these services.

Competing interests

The authors declare no competing interests. Each author of this paper has completed the ICMJE conflict of interest statement.

Acknowledgements

This study was part of a larger research study examining public perceptions of paramedic care in Saskatchewan and was funded by the Saskatchewan College of Paramedics and Mitacs Accelerate. The research team acknowledges the contributions of all 56 participants.

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