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Original Article

The State of Heart Failure Care in Canada: Minimal Improvement in Readmissions Over Time Despite an Increased Number of Evidence-Based Therapies

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ABSTRACT

Background: An unanswered question is whether the combination of advances in medical and device therapy over the past decade has translated into improved outcomes for patients with heart failure (HF) in Canada.

Methods: The Canadian Institute for Health Information (CIHI) Hospital Morbidity Database was used to identify hospitalizations for HF among patients aged 18 years and older in Canadian hospitals during fiscal years 2009/2010 and 2018/2019. We assessed interprovincial

RÉSUMÉ

Introduction : La question demeure de savoir si, au cours de la dernière décennie au Canada, la combinaison des avancées dans les traitements médicaux et à l'aide d'un dispositif s'est traduite par de meilleurs résultats cliniques chez les patients atteints d'insuffisance cardiaque (IC).

Méthodes : Nous avons utilisé la base de données sur la morbidité hospitalière de l'Institut canadien d'information sur la santé (ICIS) pour recenser les hospitalisations de patients atteints d'IC âgés de 18 ans

Heart failure (HF) is a leading cause of cardiovascular morbidity and mortality in Canada.[1] During the past decade, major advances have been made in the medical and device therapies used to treat patients with HF, particularly in the context of reduced ejection fraction (HFrEF).[2] Additionally, many evidence-based guidelines have been published internationally to provide practicing clinicians with recommendations on how to optimize care for patients with HF.[3-6] However, studies from other countries have demonstrated that, despite these interventions, patients with HF still are receiving suboptimal care.[7,8] Whether the combination of advances in therapy and the publication of evidence-based guidelines have translated into better outcomes for our patients with HF in Canada remains unclear.

Quality assessment at a national level is required to evaluate whether HF management is being applied effectively across Canada. Toward this end, 49 HF quality indicators

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differences in age, sex, length of stay (LOS), discharge disposition, type of admitting hospital, and most responsible service, for all HF admissions. National and provincial rates of HF admissions and all-cause 30-day readmissions were calculated.

Results: After adjusting for age, the rate of HF admissions in Canada was 216 per 100,000 population in 2009/2010 and 2018/2019. The majority of patients with HF were admitted to general internal medicine and community hospitals in both 2009/2010 and 2018/2019. The national, crude, all-cause 30-day readmission rate stayed constant at 20.6%, and the majority of patients were readmitted with the diagnosis of HF in both 2009/2010 (62.5%) and 2018/2019 (59.0%). Median and interquartile range of HF LOS also remained unchanged at 7 days (3-14).

Conclusions: The national rate of HF admissions, 30-day readmissions, and HF LOS have remained unchanged from 2009/2010 to 2018/2019, despite advances in medical and device therapy during this timeframe.

et plus dans les hôpitaux du Canada au cours des années financières 2009/2010 et 2018/2019. Nous avons évalué les différences interprovinciales selon l'âge, le sexe, la durée du séjour (DDS), l'état à la sortie, le type d'hôpital à l'admission et le service le plus tenu à la prise en charge du patient, de toutes les admissions liées à l'IC. Nous avons calculé les taux provinciaux et national des admissions liées à l'IC et les réadmissions toutes causes confondues dans les 30 jours.

Résultats : Après ajustement en fonction de l'âge, le taux d'admissions liées à l'IC au Canada était de 216 pour 100 000 habitants en 2009/2010 et en 2018/2019. La majorité des patients atteints d'IC avaient été admis en médecine interne générale et dans les hôpitaux communautaires en 2009/2010 et en 2018/2019. Le taux national, brut, toutes causes confondues de réadmissions dans les 30 jours était resté constant à 20,6 %, et la majorité des patients avaient eu des réadmissions liées au diagnostic d'IC en 2009/2010 (62,5 %) et en 2018/2019 (59,0 %). L'écart interquartile et la médiane de la DDS liée à l'IC étaient aussi demeurés inchangés après 7 jours (3-14).

Conclusions : Le taux national des admissions liées à l'IC, les réadmissions dans les 30 jours et la DDS liée à l'IC étaient demeurés inchangés de 2009/2010 à 2018/2019, malgré les avancées des traitements médicaux et à l'aide d'un dispositif durant cette période de temps.

(QIs) were established by the Canadian Cardiovascular Society HF Quality Indicators Working Group to measure adherence to evidence-based processes, and assess outcomes of HF care.[9] From this comprehensive list, 6 QIs were selected to evaluate the safety and outcomes of care during a HF hospitalization. However, feasibility testing of these 6 QIs revealed that only 30-day readmission could be reported and measured across Canada.[9] Additionally, although length of stay (LOS) is not one of the HF QIs, it could influence readmission risk, both as a process of care related to the timing of hospital discharge and as a proxy of patient-related factors leading to increased risk of hospitalization.[10]

Given these considerations, our objectives were to improve knowledge about HF care in Canada by describing provincial- and national-level information about HF hospitalizations, 30-day readmission rates, and HF LOS across Canada from 2009/2010 and 2018/2019. These data will provide the basis for informing the direction of future national HF care quality-assessment initiatives.

Methods

The Canadian Institute for Health Information (CIHI) Hospital Morbidity Database (HMDB) was used to collect data on HF hospitalizations across Canada. Details regarding all HMDB variable definitions have been published elsewhere.[11] We identified all hospitalizations for HF among patients aged $\geq$ 18 years, as well as all-cause hospital readmissions that occurred within 30 days of discharge, for the periods of April 1, 2009 to March 31, 2010 (2009/2010) and April 1, 2018 to March 31, 2019 (2018/2019), for all provinces except Quebec. The most recent Quebec data available were for April 1, 2017 to March 31, 2018, and this dataset was used to reflect the 2018/2019 time period. The numbers of cardiologists at the provincial and national level in 2009/2010 and 2018/2019 were obtained from the Canadian Medical Association.[12]

HF admission cohort

Hospital admissions for HF were ascertained by identifying all acute care hospitalizations with the most responsible diagnosis (MRDx) of HF (International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada [ICD-10CA] codes I50.0, I50.1, and I50.9). Each hospitalization was counted for patients admitted multiple times.

HF readmission cohort

The readmission cohort represents a subset of the hospitalizations included in the HF admission cohort. It was created by building episodes of care in which the most responsible diagnosis (MRDx) was HF. An episode of care was defined as a continuous inpatient hospitalization from initial admission to final discharge, regardless of interhospital transfers. Hospital admissions were excluded from the episode-building if the patient had an invalid health card number, if the date of admission or discharge was outside the time periods of interest, or if an MRDx was made of a mental health condition or palliative care per CIHI methods.[11] Episodes of care resulting in in-hospital death were excluded because these patients were not at risk of readmission. Additionally, episodes of care with discharge dates between March 2 and March 31 of each fiscal year of interest were excluded to allow 30-day follow-up to identify readmissions.

Variables of interest

For the HF admission cohort, the distribution of patient age, sex, and comorbidities, as well as the type of admitting hospital, most responsible service, LOS, and discharge disposition were reported at the provincial and national levels. Age was categorized into the groups 18-44, 45-64, 65-84, and $\geq$ 85 years. Admitting hospitals were categorized as being either teaching or community. Teaching hospitals had confirmed teaching status from the provincial ministry. The

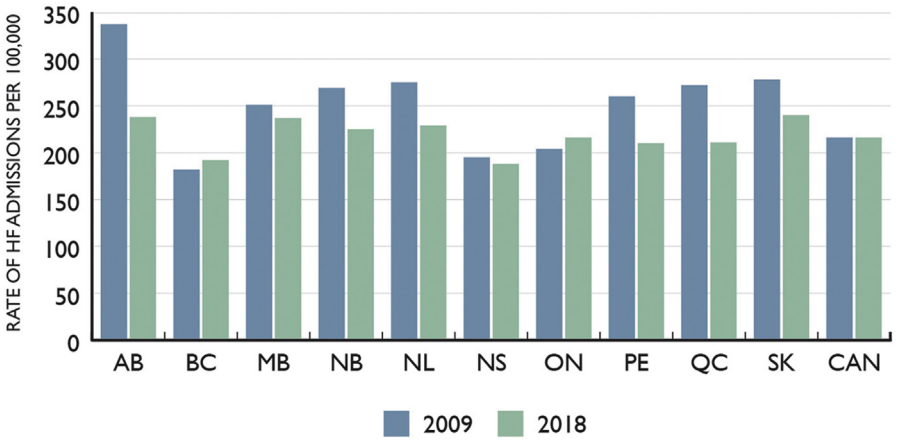

Figure 1. Age-standardized annual rate of heart failure (HF) admissions per 100,000 population in 2009/2010 and 2018/2019, by province. Bars represent age-standardized admission rate, by province. AB, Alberta; BC, British Columbia; CAN, Canada; MB, Manitoba; NB, New Brunswick; NL, Newfoundland; NS, Nova Scotia; ON, Ontario; PE, Prince Edward Island; QC, Quebec; SK, Saskatchewan.

main patient service describes the service by which the patient was treated for the longest cumulative time during the hospital stay and was classified into the following categories: (i) cardiology; (ii) general internal medicine (GIM); (iii) family medicine; and (iv) other. Hospital LOS was calculated as the time from the admitting date to the discharge date of the entire care episode. When admission and discharge date were identical, the LOS was considered to be 1 day. Discharge disposition was classified into the following categories: (i) home with support/referral (defined as discharge to private home, condominium, or apartment, with supports from the community at home or referral to services; does not include discharge to group/supportive housing); (ii) home without support; (iii) other (including Inpatient care, continuing care); and (iv) death.

Table 1. Selected baseline characteristics for hospitalized patients with heart failure (in Canada)

Characteristic	2009/2010	2018/2019
Age, y, median	79	80
18–44	1.4 (762)	1.7 (1224)
45–65	14.2 (7985)	12.3 (8966)
65–84	54.7 (30,683)	50 (36,329)
85+	29.6 (16,618)	36 (26,165)
Male	51 (28,604)	51.1 (37,143)
LOS, d, median (25th, 75th percentile)	7 (3, 13)	7 (4, 13)
Discharge disposition, %		
Home without support	57.0	44.0
Home with support	18.0	28.3
Other*	15.1	19.0
In-hospital death	9.8	8.6
Medical comorbidities		
Hypertension	17 (9538)	21.9 (15,940)
AMI	3.8 (2141)	4 (2919)
Other ischemic heart disease	20.6 (11,559)	18.3 (13,269)
Atrial fibrillation	23.2 (12,995)	27.6 (20,084)
Stroke	0.21 (117)	0.15 (106)
Diabetes	30.5 (17,076)	32.7 (23,735)
COPD	14.5 (8132)	14.8 (10,750)
Chronic kidney disease	18.4 (10,331)	21.7 (15,796)
Charlson group		
0	46.9 (26,260)	45.1 (32,755)
1	47.4 (26,551)	48.9 (35,576)
2	5.8 (3237)	6 (4353)

Values are % (n), unless otherwise indicated. Due to differences in data collection, distinguishing comorbidities from secondary diagnoses in Quebec data was not possible. Therefore, Charlson score groups for data submitted by Quebec are assigned differently, in order to achieve comparability across the country, as follows: patients with a score of 0 or 1 are in group 0, patients with a score of 2, 3, or 4 are in group 1, and patients with a score of 5 or more are in group 2.

AMI, acute myocardial infarction; COPD, chronic obstructive pulmonary disease; LOS, length of stay.

*This includes transfers to other inpatient service or care facility.

Statistical analysis

Rates of hospital admission for HF were ascertained after direct age standardization to the 2011 Canadian population. Preliminary post-census estimates for July 1 of 2009 and 2018 from Statistics Canada were used as denominators.[13] The number of cardiologists per 100,000 population in 2009/2010 and 2018/2019 were ascertained using the same population estimates from Statistics Canada.[12,13]

For the HF readmission cohort, the rate of 30-day all-cause readmission and the reason for readmission were ascertained for the fiscal years 2009/2010 and 2018/2019. Readmissions to any hospital in the country were included. Rate of readmission was reported at the provincial and national level according to age group, sex, type of hospital, patient service, and type of discharge during the index hospitalization, as follows: (i) home with support; (ii) home without support; and (iii) transferred to another hospital. For patients with an interhospital transfer during their episode of care, the type of hospital reported corresponds to the discharging hospital at the end of the episode of care.

Results

HF admission cohort

In 2009/2010, the total of HF hospital admissions in Canada was 56,048, and this number increased to 72,685 by 2018/2019. However, the age-standardized national rate of HF admissions per 100,000 population was 216 in both

Table 2. For all heart failure admissions in both time periods, a provincial outline of type of treating hospital, main patient service, and rate of cardiologists per 100,000 population

Province/location	Treated (%) in community hospital (vs teaching)*		Treated (%) on cardiology ward (vs other)†		Rate of cardiologists, per 100,000 population‡	
	2009	2018	2009	2018	2009	2018
Alberta	45.5	45.4	13.1	7.3	3	3.8
British Columbia	58.9	56.2	37.2	27.9	2.3	3.1
Manitoba	76.4	66.9	7.2	13.0	1.6	2.5
New Brunswick	78.7	78.5	23.0	6.6	2.1	3.0
Newfoundland	62.4	65.1	24.1	40.5	2.2	3.4
Nova Scotia	75.8	70.6	30.6	26.0	3.7	4.1
Prince Edward Island	99.3	100	0.0	0.0	0.7	1.3
Ontario	54.5	72.2	45.8	43.3	3.2	4.0
Quebec	56.4	66.2	45.2	42.7	4.8	5.7
Saskatchewan	56.2	47.4	29.0	12.1	2.2	2.8
Canada	57.1	65.3	36.1	34.0	4.2	5.1

Results for the Territories are not shown due to small counts, but they are included in the Canada rate.

*Teaching hospitals were identified using Provincial Ministry records.

†Main patient service describes the service by which the patient was treated for the longest cumulative time during the hospital stay and was classified as cardiology vs other (mainly general internal medicine and family medicine).

‡The number of cardiologists at the provincial and national levels in 2009/2010 and 2018/2019 were obtained from the Canadian Medical Association.[12]

2009/2010 and 2018/2019 (Fig. 1). Men were admitted with HF at a rate of 267 per 100,000 in 2009/2010, and 257 per 100,000 in 2018/2019. For women, the rate of HF admission was 178 per 100,000 in 2009/2010 and 182 per 100,000 in 2018/2019. Baseline characteristics of the HF hospitalizations during both time periods are presented in Table 1. The national median LOS was 7 days in 2009/2010 and 7 days in 2018/2019 (Table 1).

Table 2 demonstrates that the majority of patients with HF were admitted to community hospitals in both 2009/2010 (57.1%) and 2018/2019 (65.3%). Alberta was the only province in which more patients with HF were admitted to teaching hospitals in both time periods.

The majority of patients with HF in Canada were admitted to the department of GIM. Overall, 51.1% of patients with HF in Canada were admitted to a GIM department in 2009/2010, and 57.7% in 2018/2019 (Table 2). However, HF admissions were more equally distributed between cardiology and GIM departments in Ontario and Quebec than in the other provinces. New Brunswick was the only province where the majority of patients with HF were admitted to a family medicine department in both time periods (57.0% in 2009/2010 and 76.9% in 2018/2019).

Despite a rise in the number of licensed cardiologists per 100,000 population in all provinces between 2009/2010 and 2018/2019, a decrease occurred in the proportion of patients with HF being admitted to an inpatient cardiology service at the national level (Table 2). In Alberta, a 29% relative increase occurred in the number of cardiologists per 100,000 population between 2009/2010 and 2018/2019, yet a 46% relative reduction occurred in the proportion of patients with HF being admitted to a cardiology service. In only Manitoba and Newfoundland did the proportion of patients with HF admitted to a cardiology service increase.

Nationally, 57.0% of patients admitted with HF in 2009/2010, and 44.0% in 2018/2019, were discharged home

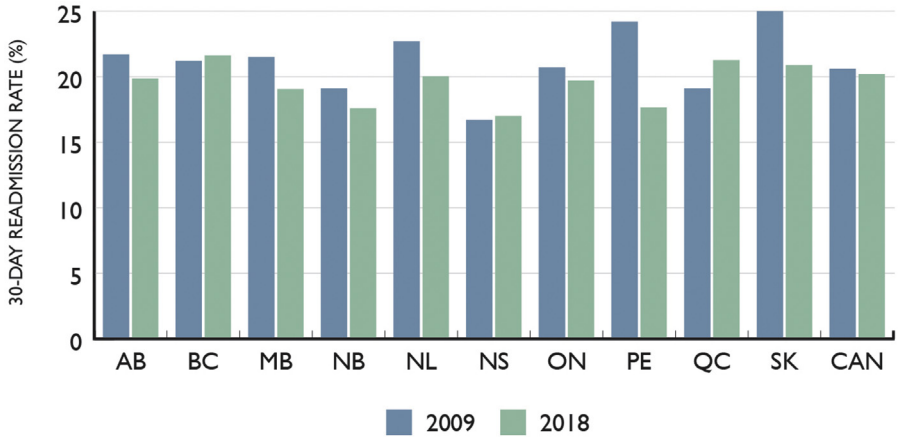

Figure 2. Crude rate of 30-day readmission for patients with heart failure in 2009/2010 and 2018/2019. Bars represent 30-day readmission rate for each province and Canada. Results for the territories are not shown due to small counts, but they are included in the Canada rate. AB, Alberta; BC, British Columbia; CAN, Canada; MB, Manitoba; NB, New Brunswick; NL, Newfoundland; NS, Nova Scotia; ON, Ontario; PE, Prince Edward Island; QC, Quebec; SK, Saskatchewan.

Table 3. Heart failure (HF) readmission cohort: reasons for all-cause readmission

Year	HF/CMO	Renal/electrolyte disorders	Pulmonary	MI/CP	Arrhythmia	Infection	Valvular	Other
2009/2010	62.5	4	11	7	3	3	1	9
2018/2019	59.0	4	13	3	3	4	1	12

Values are %. Causes grouped in the "other" category included anemia/hemorrhage, neurologic conditions such as transient ischemic attack/stroke, gastrointestinal disorders, diabetes, fractures, hypotension, weakness, dizziness, malaise, fatigue, and syncope.

CMO, cardiomyopathy; CP, chest pain; MI, myocardial infarction.

without support, whereas the proportion of patients discharged with support increased from 18.0% in 2009/2010 to 28.3% in 2018/2019. The all-cause in-hospital mortality of admitted HF patients was 9.8% in 2009/2010 and 8.6% in 2018/2019. The distribution of discharge disposition was similar across provinces (Table 1).

HF readmission cohort

In Canada, the absolute number of HF patients who were *readmitted* to the hospital within 30 days was 8382 in 2009/2010, and 11,015 in 2018/2019, with the national, crude all-cause 30-day readmission rate remaining almost identical, at 20.6% (2009/2010) and 20.2% (2018/2019; Fig. 2).

In both 2009/2010 and 2018/2019, the majority of these readmitted patients (62.5% and 59.0%, respectively) had a primary diagnosis related to HF/cardiomyopathy (Table 3). Other common reasons for readmission included pulmonary conditions, myocardial infarct/chest pain, renal/electrolyte abnormalities, arrhythmia, valvular disease, and infection.

In 2018/2019, the national rate of 30-day readmission did not vary by sex or age groups across provinces. Nationally, the 30-day readmission rate was 20.1% in women and 20.5% in men (Fig. 3). Findings generally were similar across provinces, except for Nova Scotia, where the 30-day readmission rate was 19.3% in women and 14.8% in men, and Prince Edward Island, where the rate was 21.9% for men and 9.7% for women (Fig. 3). Figure 4 demonstrates that the national-level 30-day readmission rate was similar across all age groups, ranging between 19.0% and 21.1%.

Thirty-day readmission rates were largely the same across Canada regardless of the type of hospital to which the patient with HF was initially admitted. The crude rate of 30-day readmission in 2018/19 was 20.7% in community hospitals, and 19.9% for teaching hospitals.

However, national rates of 30-day readmission did vary according to discharge disposition of the original hospital admission (Table 1). The crude rate of 30-day readmission was 19.2% in patients discharged without support, and 23.1% in patients with HF discharged home with support. At the provincial level, patients discharged home with support had the highest rates of 30-day readmission in all provinces, except Saskatchewan (Fig. 5).

Discussion

Our analysis of pan-Canadian-level hospital discharge data indicates that the 30-day readmission rate and LOS for patients with HF have remained essentially unchanged from 2009/2010 to 2018/2019. These findings highlight the need for further evaluation, to identify potential gaps in processes of care that then can be addressed to improve outcomes for patients and reduce the burden of HF on the healthcare system.

Although Samsky et al. reported that all-cause 30-day readmission rates decreased slightly in Canada, from 19.7% in 2005 to 17.6% in 2015 ($P < 0.001$),[14] our observations indicate that this decline does not persist in subsequent years. Our results are consistent with findings from a more contemporary study, in which the risk-adjusted 30-day

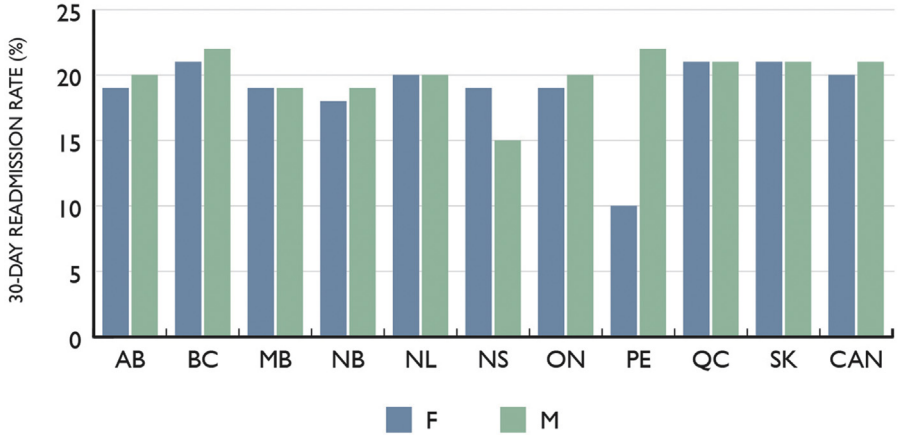

Figure 3. Crude rate of 30-day readmission by sex and province in 2018/2019. Columns represent readmission rate by sex. Results for the territories are not shown due to small counts, but they are included in the Canada rate. AB, Alberta; BC, British Columbia; CAN, Canada; F, female; M, male; MB, Manitoba; NB, New Brunswick; NL, Newfoundland; NS, Nova Scotia; ON, Ontario; PE, Prince Edward Island; QC, Quebec; SK, Saskatchewan.

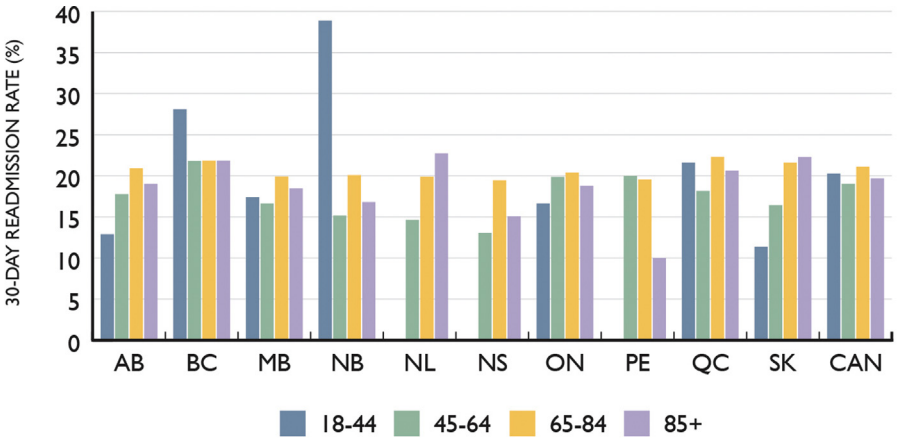

Figure 4. Crude rate of 30-day hospital readmission by age group and province in 2018/2019. Columns represent readmission rate by age group. Results for the territories are not shown due to small counts, but they are included in the Canada rate. AB, Alberta; BC, British Columbia; CAN, Canada; MB, Manitoba; NB, New Brunswick; NL, Newfoundland; NS, Nova Scotia; ON, Ontario; PE, Prince Edward Island; QC, Quebec; SK, Saskatchewan.

readmission rate for patients with HF in Ontario was unchanged from 2006 to 2014, at approximately 21.0%, followed by a decline to 20.8% in 2017.[15] This finding highlights the fact that HF admissions continue to be an ongoing burden to the healthcare system, despite the major advances in the treatment of this condition that have occurred during the past decade.

Important to note is that HF was the most common cause for readmission within 30 days. Some studies have reported a higher rate of noncardiovascular causes for 30-day readmission[16,17]; however, decompensated HF remains a leading cause of readmission in these other trials, consistent with our findings. Although this factor potentially could be the result of patient nonadherence to medications or dietary restrictions, another possible contributing factor includes the underutilization of evidence-based medications by healthcare providers, particularly in the case of patients with HFrEF.[7,18-22] Despite consensus guidelines recommending the use of angiotensin-converting enzyme inhibitors, beta-blockers, mineralocorticoid antagonists, and most recently, angiotensin receptor neprilysin inhibitors for the treatment of patients with HFrEF, studies have shown that a significant treatment gap remains; overall, less than 70% of eligible patients are initiated on these medications, and less than 30% of patients actually achieve target doses.[7,18-22]

Although a recent study did demonstrate higher usage of guideline-directed medical therapies at a specialized heart function clinic within an academic centre in Montreal, these results likely are not generalizable to the standard of care that patients with HF receive in other parts of Canada.[22] Indeed, another contemporary Canadian study revealed that only 12% of eligible patients with HFrEF received sacubitril valsartan in 2018.[20] The underutilization of guideline-directed medical therapies may be related to the known risk-treatment paradox that has been noted by previous studies, in which patients with HF at highest risk of death are least likely to receive

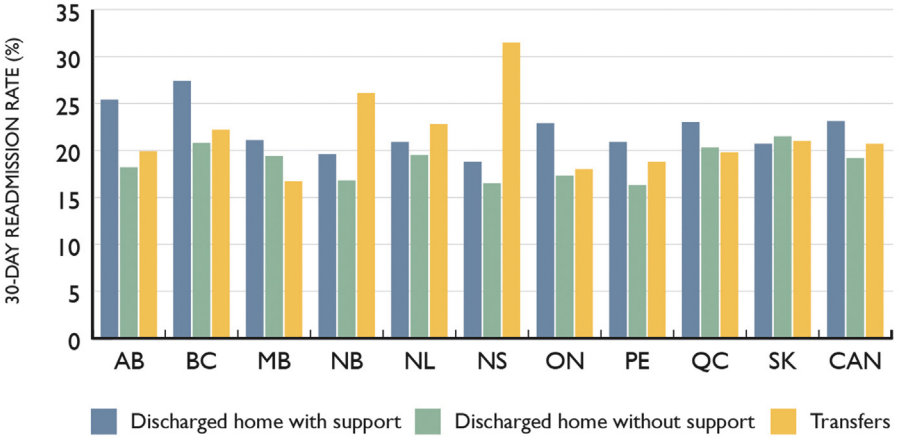

Figure 5. Crude rate of hospital readmission by discharge disposition and province in 2018/2019. Bars represent the percentage of patients with heart failure who were readmitted within 30 days. Results for the territories are not shown due to small counts, but they are included in the Canada rate. AB, Alberta; BC, British Columbia; CAN, Canada; MB, Manitoba; NB, New Brunswick; NL, Newfoundland; NS, Nova Scotia; ON, Ontario; PE, Prince Edward Island; QC, Quebec; SK, Saskatchewan.

evidence-based therapies.[23,24] However, although high-risk patients likely have more comorbidities leading to medication intolerance or contraindications,[20] evidence also suggests that underutilization of evidence-based therapies among eligible patients persists.[24] Understanding the reasons underlying this mismatch may facilitate improvements in care and outcomes for patients with HF.[23]

Some nonmedical factors leading to underutilization of evidence-based therapies include medication cost, as well as access to healthcare facilities[18] and specialists.[25,26] Our findings reveal that most of the patients with HF in Canada are admitted to a GIM department. In fact, despite an increase in the number of cardiologists across the country between 2009 and 2018, most provinces had a decrease in the number of HF admissions to inpatient cardiology services. This finding is particularly relevant because patients admitted to cardiology wards are more likely to receive echocardiography, which is prognostically important,[27] and to be administered guideline-directed therapies if they have HFrEF.[25-29] In comparison, even after adjusting for age and comorbidities, patients with decompensated HF treated on GIM wards had a 59% increased risk of in-hospital death, compared with those treated on cardiology wards.[28]

Finally, the median HF LOS has remained essentially unchanged, at approximately 7 days, between 2009 and 2018. This finding is relevant because other trials have shown that all-cause readmissions increase as LOS extends beyond 5 to 6 days.[10,30,31] However, a short LOS of 1-2 days also has been associated with increased rates of cardiovascular and HF readmissions.[10] This finding does not necessarily mean that institutions should avoid targeting a short HF LOS. Instead, based on the substantial body of evidence showing that early outpatient follow-up after discharge significantly improves outcomes,[32-34] rapid outpatient follow-up within 2 weeks conceivably could be effective in reducing repeat hospitalizations in patients who have a short LOS[10,35]—particularly if this follow-up occurs with a physician who is already familiar with the patient.[34] In contrast, because longer LOS was an indicator of increased likelihood of readmission and death, peri-discharge strategies that include multidisciplinary teams[36] may mitigate risk among patients with long hospital stays.[10] Determining whether patients with HF who were discharged with support received any transitional care services or timely physician follow-up is beyond the scope of this study, but certainly this question could be investigated at a more granular level in future analyses.

Limitations

This study is based on hospital administrative data, which have known limitations regarding potential variability across hospitals in the accuracy and consistency of coding the main diagnosis.[37] Additionally, we did not have access to data on left ventricular ejection fraction, use of device therapies, or drug regimens of individual patients. Although we recognize these limitations, the outcomes we evaluated are relevant for patients with HF and decision-makers, regardless of left ventricular ejection fraction, causative mechanism, or clinical status. Additionally, the administrative data do not account for patients with HF who may have died out of hospital within 30 days. We also were unable to determine whether patients admitted to certain services received consultations from specialists, such as cardiologists or nurse practitioners specializing in HF. Although the majority of patients with HF were admitted to GIM departments across Canada, cardiologists or nurse practitioners specializing in HF may still have been actively involved in their care through inpatient consultations. The data also do not allow us to verify whether patients with HF who were initially admitted to a GIM department were subsequently transferred to cardiology during their hospitalization. Finally, although data from the Northwest Territories, Yukon, and Nunavut were included in the aggregate analyses, insufficient sample sizes for these provinces create the potential for significant bias. Exploring the observed trends in the territories would require further research.

Conclusion

Our study has demonstrated that the national rate of HF admissions, 30-day readmissions, and HF LOS remained unchanged in Canada from 2009/2010 to 2018/2019, despite numerous advances in medical therapies and publication of HF clinical guidelines during this timeframe. The findings from our observational study lay the groundwork for future research and should serve as a resounding call to action for clinicians, administrators, and health policy leaders to question the status quo of HF management in Canada. As the writer James Baldwin once said, "Not everything that is faced can be changed, but nothing can be changed until it is faced."[38] Certainly, a collaborative and sustained effort will be needed to find creative solutions to improve HF care and reduce the number and length of hospital stays. We believe our study represents an important first step on the journey that ultimately will lead to better-quality care for our patients with HF across the nation in the decades to come.

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