

## Care transition of older adults from hospital to home

Transição do cuidado de pessoas idosas do hospital para casa  
Transición del cuidado de adultos mayores del hospital a su casa

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## Abstract

**Objective:** To analyze the quality of care transition of older adults who were discharged from hospital to home.

**Methods:** This is a cross-sectional observational study, conducted with 156 older adults after public hospital admission, located in the municipality of Piracicaba, state of São Paulo. Data were collected in patients' electronic medical records and by telephone calls with older adults, their relatives and/or caregivers, up to four weeks after hospital discharge. We used a questionnaire with sociodemographic data and the Care Transitions Measure, version validated for Brazil.

**Results:** The mean duration of the last hospitalization was 8.27 days, mostly caused (72.44%) by COVID-19 and 75% of older adults had between 1 and 3 comorbidities, with hypertension (57.7%) being the most frequent. The mean CTM-15 score was 68.6. Factor 1, Management preparation, obtained the highest score (70.5), and Factor 4, Care plan, the lowest (59.14). There was a positive correlation between the 4 factors of Care Transitions Measure, also among these factors is the number of drugs used to treat older adults, according to the Anatomical Chemical Therapeutic Classification.

**Conclusion:** We evidenced the quality of the transition of care in the hospital close to the value considered satisfactory, with two of the four factors with a score greater than 70; however, there is a need to adopt strategies to improve the discharge process from hospital to home, especially with regard to preferences imported and care plan for older adults.

## Resumo

**Objetivo:** Analisar a qualidade da Transição do Cuidado de idosos que receberam alta do hospital para casa.

**Métodos:** Estudo observacional transversal, realizado com 156 idosos, após internação em hospital público, localizado no município de Piracicaba, estado de São Paulo. Os dados foram coletados em prontuário eletrônico do paciente e por ligações telefônicas com idosos, seus familiares e/ou cuidadores, até quatro semanas após alta hospitalar. Foram utilizados questionário com dados sociodemográficos e instrumento *Care Transitions Measure*, versão validada para o Brasil.

**Resultados:** A duração média da última internação foi de 8,27 dias causada, majoritariamente (72,44 %) por COVID-19 e 75% dos idosos apresentaram entre 1 e 3 comorbidades, sendo a hipertensão arterial sistêmica (57,7%) a mais frequente. A média de escore do CTM 15 - Brasil foi 68,6. O Fator 1 – Preparação para o autogerenciamento obteve o maior escore (70,5) e o Fator 4 – Plano de Cuidados, o menor (59,14). Houve correlação positiva entre os 4 fatores do *Care Transitions Measure*, também entre estes fatores e do número de medicamentos utilizados para tratamento dos idosos, de acordo com a Classificação Anatómica Terapêutica Química.

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Conflict of interest: none to declare.

**Conclusão:** Evidenciou-se a qualidade da Transição do Cuidado no hospital, próxima do valor considerado satisfatório, sendo dois dos quatro fatores com pontuação maior que 70; entretanto há necessidade de adoção de estratégias para melhorar o processo de alta do hospital para casa, principalmente, no que se refere a preferências asseguradas e plano de cuidado dos idosos.

## Resumen

**Objetivo:** Analizar la calidad de la transición del cuidado de adultos mayores que recibieron alta del hospital a su casa.

**Métodos:** Estudio observacional transversal, realizado con 156 adultos mayores, después de estar internados en un hospital público ubicado en el municipio de Piracicaba, estado de São Paulo. Los datos fueron recopilados de la historia clínica del paciente y mediante llamados telefónicos a los adultos mayores, sus familiares o cuidadores, hasta cuatro semanas después del alta hospitalaria. Se utilizó un cuestionario con datos sociodemográficos y el instrumento *Care Transitions Measure*, versión validada para Brasil.

**Resultados:** La duración promedio de la última internación fue de 8,27 días, causada principalmente por COVID-19 (72,44 %) y el 75 % de los adultos mayores presentó entre una y tres comorbilidades, con hipertensión arterial sistémica como la más frecuente (57,7 %). El promedio de puntuación del CTM 15 - Brasil fue de 68,6. El Factor 1: Preparación para la autogestión obtuvo la mayor puntuación (70,5) y el Factor 4: Plan de cuidados, el menor (59,14). Se observó correlación positiva entre los cuatro factores del *Care Transitions Measure*, también entre estos factores del y número de medicamentos utilizados para el tratamiento de los adultos mayores, de acuerdo con la Clasificación Anatómica Terapéutica Química.

**Conclusión:** Se evidenció la calidad de la transición del cuidado en el hospital, cercana al valor considerado satisfactorio, donde dos de los cuatro factores obtuvieron puntuación superior a 70. Sin embargo, existe la necesidad de adoptar estrategias para mejorar el proceso del alta del hospital a la casa, principalmente respecto a las preferencias aseguradas y al plan de cuidado de los adultos mayores.

## Introduction

Population aging is a fact that occurs on a global scale, with increased life expectancy, resulting in significant growth in the number of older adults.<sup>(1)</sup> In 2050, the world population aged 60 and over is expected to reach 2 billion.<sup>(2)</sup>

Brazil follows a global trend, but population aging has occurred rapidly, with percentages well above global ones. The number of Brazilians aged 60 years and over was 2.6 million in 1950 and is expected to reach 72.4 million in 2100.<sup>(1)</sup>

With an old age structure, the great challenge will be to provide quality of life to the additional years experienced by people. Thus, public policies should encourage health promotion and disease prevention, considering that with aging, in parallel, diseases specific to this age group gain greater expression.<sup>(3)</sup>

In addition to the chronic diseases that are more prevalent in aging, in 2020 there is the COVID-19 pandemic that significantly affected older adults, putting a great burden on the health of this population, especially those with comorbidities.<sup>(4,5)</sup>

When analyzing the fragility of the services provided to older adults in the Health Care Network (RAS - *Rede de Atenção à Saúde*), we observed discontinuity of care, absence of referral and counter-referral, costly hospital admissions and constant visits to the emergency room.<sup>(6)</sup>

Understanding the context of hospitalizations of older adults through clinical management, discharge planning and provision of resources at the residence, can avoid hospital readmissions, which generate a burden on the health system and discomfort for patients and their families.<sup>(6)</sup>

We observed that the theme of care transition (CT) can contribute and complement this discussion, since in the last decades it has been shown as a response to the growing prevalence of chronic diseases, population aging, the reduction of hospital stay and the implementation of a more integrated health system.<sup>(6,7)</sup>

CT can be defined as a time interval that begins with the preparation of individuals for discharge and ends when he is received at the next service. Composed of an interdisciplinary care plan, it is developed in a context of several relationships, including patient and caregivers, professionals who provided care and those who will continue care. It covers activities related to discharge preparation, medication monitoring, social networking, post-discharge symptom management and outpatient follow-up.<sup>(6,7)</sup>

Given the above, CT of older adults from hospital to home is relevant and needs intense attention, during and after hospital stay, as older adults may have functional losses and are more vulnerable to risks that can affect their health.<sup>(7,8)</sup>

Thus, this study aimed to analyze the quality of CT of older adults who were discharged from

hospital to home, under the following aspects: information transfer; patient, family and/or caregiver preparation; management support and empowerment for preferences imported.

## Methods

This is an observational, cross-sectional and quantitative study conducted at a public, medium-sized hospital, reference for 26 municipalities, in the countryside of São Paulo, Brazil.

A total of 156 older adults, aged 60 years or older, who were discharged from inpatient units of medical clinic, surgery, and semi-intensive unit, participated in the study. Simple random sampling was used. Older adults who remained hospitalized for at least 24 hours, a minimum period that characterizes a hospital stay, were included. Older adults transferred to another hospital or who died were excluded. If the older adult was not able to answer the questions, the instrument was applied to family members and/or caregivers who followed hospitalization and discharge.

Data were collected from January to July 2020. To identify the sociodemographic profile (gender, age, municipality of residence, marital status, education) and clinical characteristics of older adults (discharge diagnosis – ICD 10), we assessed the electronic medical records of the weekly discharge reports. The data were transcribed into a form and later transferred to a spreadsheet in Microsoft Office Excel 2016, with independent double typing, and then simple descriptive statistics were performed.

Sequentially, the Care Transitions Measure CTM-15, Brazilian version, was applied, composed of 15 items, measured by Likert-type scale, with five answer options. These items are grouped into four domains: information transfer; patient, family member and/or caregiver preparation; management support; and empowerment for preferences imported.<sup>(9)</sup>

The application of the instrument was carried out by telephone, up to four weeks after patient discharge, with an approximate duration of 20 minutes, recorded with participants' verbal consent, obtained after reading the Informed Consent Form

(ICF) and a cover letter. At the end of the calls, the records were transferred to the database.

To obtain the scores of the CTM-15 responses, we followed the instructions of the instrument's authors, who suggest using a formula that transforms the means obtained into scores from 0 to 100. Each item received a score from participants' response, in which the alternatives scored as follows: "Totally disagree" = 1 point; "Disagree" = 2 points; "Agree" = 3 points and "Totally agree" = 4 points. The answer option "Don't know/don't remember/not applicable" was not scored, as it was not included in the final score calculation, but it was differentially coded in order to verify the percentage of this answer in the instrument items. We calculated the simple mean of each item, as well as the mean of the total scale and by CTM-15 factor.<sup>(9)</sup>

It is considered that, for data analysis, the higher the score obtained, the better the CT. Although there is no cutoff point, the authors consider that a score equal to or greater than 70 makes CT satisfactory.<sup>(9)</sup>

To verify the relationship between dependent variable (CT) and independent variables (participant, sex, age, municipality of residence, number of people living in the house, marital status, education, occupation, medications used, discharge diagnosis (ICD-10), comorbidities associated and length of last hospitalization). Independent variables, such as the number of people living in the house, were self-reported in the calls and the others were taken from electronic medical records.

At the analytical level, initially simple descriptive statistics were performed and later, bivariate analysis. We opted for the nonparametric Spearman's and Kruskal-Wallis' correlation tests. The following hypotheses were assumed for the tests: H0=the variables are not related to MSC-15; H1= the variables are related to CTM-15.<sup>(9)</sup>

Dependent variables were CT scale standardized scores, assessed globally through Factors 1, 2, 3 and 4. The independent variables used in all models were: age; sex; education; marital status; County; people who live in the house; occupation; ICD10 group; total comorbidities; total number of medications for the cardiorespiratory system; total

number of medicines for the digestive system and metabolism; total number of drugs for the genitourinary system and sex hormones; total number of medicines for the respiratory system; use of levothyroxine sodium; total drugs for blood and hematopoietic organs; total number of medications for the musculoskeletal system; total number of drugs for the nervous system; and total number of medicines for different uses.

To perform the analyses, we used the 5% significance level ( $\alpha = 0.05$ ) and the R program (R Core Team, 2020) version 4.0.1.

The research was approved by the Research Ethics Committee (REC) of the *Escola de Enfermagem de Ribeirão Preto* (CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 28295020.2.0000.5393), with the consent of the health service, in compliance with the guidelines approved by Resolution CNS 466/12.

## Results

Participants were 156 older adults, aged 60 years or older, family members and/or caregivers. There was a predominance of interviews with family members and/or caregivers, a total of 138 (88.46%). Among the older adults, 75 (48.08%) were men and 81 (51.92%) were women, with an average of 74.7 years, living in the family environment with three people (median). Regarding marital status, 66 (42.31%) of older adults were married, while 57.69% comprised widowed, single and divorced individuals. Older adults' predominant income came from government benefits, such as retirement and/or pension for 132 (84.62%) participants. There was a low level of education, with incomplete elementary school (86; 55.13%) and illiterate (24; 15.38%). The mean duration of the last hospitalization was 8.27 days, mainly caused by COVID-19 (72.44%). Among the patients, 74.4% had between 1 and 3 comorbidities. The most frequent comorbidity was hypertension (57.7%). We observed that more than 50% of older adults do not use any medication for all Anatomical Therapeutic

Chemical Classification, except for older adults with changes in the cardiovascular system. Of these older adults, 96 (62,8%) use 1 to 6 types of medications. Regarding the CTM-15, the mean value of the total score identified in this study was 68.59, with the minimum value being 20 and maximum 100. After analysis of CTM-15, older adults were classified by the general score and by factors from 1 to 4, according to Table 1.

**Table 1.** Distribution of means and standard deviation of CTM-15 by factors, applied among older adults who were discharged from hospital to home

Scores	
By factors*	70.50 ± 14.41
Factor 1 - Management preparation	71.23 ± 15.35
Factor 2 - Understanding medications	67.74 ± 15.29
Factor 3 - Preferences imported	59.14 ± 16.58
Factor 4 - Care plan	
Total transition*	68.59 ± 13.15

\*Variables expressed as mean ± standard deviation.

Table 2 presents the mean and standard deviation obtained for each instrument item.

As for the frequency of answer options by CTM-15 item (Table 3), for all questions, more than 60% agreement was obtained, except question 12.

Table 4 presents the correlation between the total and factor scores of CTM-15 and the continuous variables of the study. There was a correlation between the 4 CTM-15 factors and the number of drugs used to treat older adults according to the Anatomical Chemical Therapeutic Classification. In the correlations between the factors, we observed that all are positive and the increase in the score of one factor causes the other to increase.

## Discussion

In this study, we observed that most of the hospitalizations of older adults were due to the infectious process caused by COVID-19 (72.44%) and the duration of hospitalizations reached 40 days. This is due to the fact that older adults represent a group of patients at high risk for the development of COVID-19, with rapid and progressive clinical deterioration. In older adults, immunosenescence

**Table 2.** Distribution of means and standard deviation by CTM-15 item, applied among older adults who were discharged from hospital to home

Item number	Factor	CTM-15	Mean ± standard deviation
14	2	Understand how to take medications, including quantity and times	73.93 ± 16.20
13	2	Understand medications' purpose	73.29 ± 17.11
5	1	Understand how to manage health	72.65 ± 16.71
4	1	Had information needed for self-care	71.58 ± 17.27
11	1	Confident could do what needed to take care of health	71.58 ± 16.85
9	1	Understand health care responsibilities	70.73 ± 16.22
10	1	Confident knew what to do to manage care	70.30 ± 17.17
1	3	Agreed with the health care team on health goals and mean	69.44 ± 16.05
6	1	Understand warning signs and symptoms	68.61 ± 16.72
8	1	Understand what makes the health condition better or worse	68.16 ± 18.29
3	3	Preferences considered when deciding where health needs are met	67.31 ± 17.95
2	3	Preferences considered when deciding health needs	66.45 ± 17.61
15	2	Understand medications' side effects	66.23 ± 19.05
7	4	Had a written care plan	66.01 ± 18.13
12	4	Had a written list of appointments or exams for the next weeks	50.80 ± 21.55

**Table 3.** Frequency distribution of answer options by CTM-15 item, applied among older adults who were discharged from hospital to home

CTM-15 item	Strongly disagree n(%)	Disagree n(%)	Agree n(%)	Strongly agree n(%)	Don't know/don't remember/not applicable n(%)
1	0(0.00)	12(7.69)	119(76.28)	25(16.03)	0(0.00)
2	1(0.64)	19(12.18)	115(73.72)	20(12.82)	1(0.64)
3	1(0.64)	18(11.54)	114(73.08)	23(14.74)	0(0.00)
4	0(0.00)	11(7.05)	111(71.15)	34(21.79)	0(0.00)
5	0(0.00)	8(5.13)	112(71.79)	36(23.08)	0(0.00)
6	0(0.00)	15(9.62)	115(73.72)	24(15.38)	2(1.28)
7	1(0.64)	21(13.46)	111(71.15)	20(12.82)	3(1.92)
8	1(0.64)	17(10.90)	112(71.79)	26(16.67)	0(0.00)
9	1(0.64)	7(4.49)	120(76.92)	28(17.95)	0(0.00)
10	1(0.64)	10(6.41)	116(74.36)	29(18.59)	0(0.00)
11	1(0.64)	7(4.49)	116(74.36)	32(20.51)	0(0.00)
12	0(0.00)	81(51.92)	52(33.33)	12(7.69)	11(7.05)
13	1(0.64)	5(3.21)	112(71.79)	38(24.36)	0(0.00)
14	0(0.00)	5(3.21)	112(71.79)	39(25.00)	0(0.00)
15	0(0.00)	26(16.67)	104(66.67)	24(15.38)	2(1.28)

**Table 4.** Correlation between the CTM-15 total and factor scores and the continuous variables of the study, applied among older adults who were discharged from hospital to home

Variables*	Total transition		Factor 1		Factor 2		Factor 3		Factor 4	
	Coef. Corr.	p-value	Coef. Corr.	p-value	Coef. Corr.	p-value	Coef. Corr.	p-value	Coef. Corr.	p-value
Factor 1					0.58	0.01	0.718	0.01	0.529	0.01
Factor 2							0.591	0.01	0.34	0.01
Factor 3									0.55	0.01
Number of medications for the cardiovascular system	0.180	0.024	0.138	0.087	0.075	0.355	0.247	0.010	0.137	0.090
Number of medications for the digestive system and metabolism	0.118	0.144	0.094	0.242	0.031	0.698	0.080	0.320	0.077	0.344
Number of drugs for the genitourinary system and sex hormones	0.082	0.310	0.072	0.373	0.069	0.390	0.093	0.251	0.058	0.475
Number of medications for the respiratory system	0.035	0.666	0.004	0.958	0.099	0.217	0.096	0.234	0.005	0.954
Number of medications for various systems	0.091	0.860	0.109	0.177	0.097	0.230	0.011	0.890	0.056	0.489
Number of medications for systemic hormonal preparations, excluding sex hormones and insulins	0.000	0.998	-0.119	0.138	0.040	0.620	0.022	0.784	-0.042	0.606
Number of medications for the blood and hematopoietic organs	0.211	0.010	0.201	0.012	0.092	0.253	0.193	0.016	0.148	0.066
Number of medications for the musculoskeletal system	0.099	0.220	-0.077	0.341	0.208	0.010	0.061	0.448	-0.074	0.358
Number of medications for the nervous system	0.219	0.010	0.184	0.022	0.187	0.019	0.029	0.724	0.064	0.427
Number of comorbidities	0.031	0.699	0.001	0.994	-0.008	0.919	0.041	0.616	0.050	0.538
Age	-0.007	0.931	-0.035	0.664	0.075	0.352	-0.049	0.545	-0.016	0.843
Number of people residing in the house	0.011	0.899	-0.037	0.667	-0.103	0.222	-0.025	0.770	0.074	0.383

\*Spearman's correlation test was used; statistical significance (p&lt;0.05)

and comorbid disorders are more likely to promote a virus-induced cytokine storm, resulting in life-threatening respiratory failure and multisystemic involvement.<sup>(10)</sup>

In this study, 75% of older adults had between 1 and 3 comorbidities, corroborating a study in southern Brazil that recorded 35.9% of older adults had more than one comorbidity,<sup>(11)</sup> and another that identified 72% of older adults with comorbidities.<sup>(12)</sup> Another Australian study found a frequency of 53.9% of patients in the in-hospital area.<sup>(13)</sup>

In Rio Grande do Sul, researchers identified that 83.3% of older adults hospitalized had some comorbidity.<sup>(14)</sup>

In the assessment of the factors that affect CT from home hospital, older adults with DM, it was verified that multimorbidity hinders the home recovery of older adults.<sup>(15)</sup>

Regarding medication use, more than 50% of participants did not use any medication, except older adults with changes in the cardiovascular system. For these older adults, drug administration is necessary to maintain their health, which justifies the use of 1 to 6 types of medications for cardiovascular problems.<sup>(16)</sup>

In a study carried out on drug-related problems (DRP) in older adults, it was found that drug therapy can interfere with health outcomes, especially during the transition from hospital to home, resulting in frequent re-hospitalizations.<sup>(17)</sup> DRPs can be caused due to clinical errors, lack of adherence, discrepancies, polypharmacy and adverse drug reaction, among others.<sup>(18,19)</sup> Nurses, during discharge planning, play a key role in minimizing the risks of adverse drug events, being able to provide guidance to the patient and family, making the understanding of drugs easier and reducing the possibility of hospital readmission for older adults.<sup>(20)</sup>

According to the results obtained in the present study, the quality of the CT of older adults, who were discharged from hospital to their homes, obtained an average score of 68.59 on CTM-15. These results are similar to the study with adult patients with CNCD in southern Brazil, which recorded a mean score of 69.5, considered close to satisfactory.<sup>(6)</sup> Another study conducted in southern Brazil an-

alyzed the quality of CT associated with hospital readmission, with patients aged 18 years or older, found a CTM-15 score (74.7), higher than in the present study.<sup>(21)</sup> In the United States, research with older adult patients also found a higher CTM-15 score (74.7) with the presence of care intervention, compared to patients who did not have a preparation for discharge (CTM-15 score of 65.3).<sup>(22)</sup>

CT weaknesses lead to unnecessary use of health services, both in emergencies and in hospital readmissions, and therefore, higher CTM-15 scores can decrease readmission rates.<sup>(21)</sup> This result was also observed in a study that demonstrated the effectiveness of the CT Program in reducing hospital readmission rates at 30 and 90 days, improving care quality transitions and medication adherence, as well as increasing self-efficacy in chronic diseases.<sup>(23)</sup>

Factors 1 (Management preparation) and 2 (Understanding medications) had the highest scores, both with values above 70 and Factor 3 (Preferences imported) and 4 (Care plan) had the lowest scores, with 67.74 and 59.14, respectively. Authors of a study carried out in a general, public and university hospital in southern Brazil also recorded higher score scores for factor 1 (78.1), but lower values for factor 2 (69.0).<sup>(21)</sup> In the same way, in another research carried out in the emergency department of a large university hospital in the south of Brazil, they found different results to that of this study, with lower scores for factors 2 (68.3) and 3 (68.4).<sup>(11)</sup>

The lowest score found in this research was factor 4 (care plan), which highlights the importance of improving the quality of the transitional care plan, especially for older adults with complex needs. It is necessary to involve family members and/or caregivers in care planning, so that they can actively participate in decisions related to the development and execution of the care plan, in addition to providing written instructions on the care needed after discharge.<sup>(24,25)</sup> In Brazil, most patients are excluded from decision-making in professional practice, in the work process and in the health system organization.<sup>(9)</sup>

Discharge plan is one of the strategies used in several health services, internationally, with the ob-

jective of preparing patients and developing health education actions for self-care at home, mainly by the nursing team.<sup>(26-29)</sup> Providing transitional support before and/or after discharge can mitigate hospital readmission rates.<sup>(30)</sup>

The CTM-15 items that had the highest score were 14, 13 and 05. This higher score is related to the higher score found in factors 1 and 2, which demonstrates that participants have a better understanding of the medication to be managed and the care they need to take to maintain health, corroborating a study in which patients had an understanding of what is needed to take care of their health after discharge.<sup>(21)</sup>

A study conducted to assess the quality of hospital-to-home CT found that 24% of patients had insufficient knowledge about their health and 29% did not have understandable written information about plans after discharge.<sup>(31)</sup>

A lower score was observed by older adults or those responsible for managing care in relation to guidelines regarding consultations and clinical examinations that should be performed in the following weeks after discharge. Only 50% of participants reported that they received a written, legible and easy-to-understand list of the measures that should be taken after hospital discharge.

Literature review on the effectiveness of CT interventions to support older adults from hospital to home found that those who benefited from personalized education, with goal-oriented interventions that promote their self-care capacity, had more efficient health and wellness outcomes.<sup>(32)</sup>

In this study, there was disagreement of 51.92% for item 12 and 16.67% for item 15. A similar result was observed in southern Brazil in a study on CT of patients with chronic diseases, which also found higher percentages of disagreement about medication use and its side effects.<sup>(11)</sup>

In the aforementioned study, no statistically significant differences were observed between the factors and general score regarding sociodemographic and clinical variables. A similar result was found in China, in a study on the effects of a transition program in patients with coronary heart disease.<sup>(23)</sup> A Brazilian study also did not record a statistically significant difference

between the CTM-15 score and the variables of gender, age, education and place of residence.<sup>(11)</sup>

As for the factors, there was a significant relationship between cardiovascular diseases and the total CT score and factor 3. Cardiovascular diseases in older adults are among those most frequently reported by instrument respondents in this study. Patients with chronic diseases tend to have longer hospital stay.<sup>(33)</sup> Plus studies indicate that people with compromised health status may have worse CT quality, and may not have their preferences imported,<sup>(34,35)</sup> which would explain the lower scores for factor 3 and the statistically significant relationship of some comorbidities with the scores of the instrument used.

We consider that the study contributes to reflections inherent to the nursing work process and the multidisciplinary team, as it identified aspects that need to be improved in care with regard to coordination, continuity of care and inclusion of patients, family members and/or caregivers in discharge plan planning and decision-making.

The study has as a limitation the fact that it was carried out in a hospital in the countryside of São Paulo, in one of the most developed regions of Brazil. This aspect may not be representative of the Brazilian reality, making it difficult to generalize the results. Another aspect to be considered is the development of research in the context of the pandemic.

## Conclusion

The application of the CTM-15 showed the transition from hospital to home close to 70%, which is considered satisfactory. Weaknesses were found in care plan, with lower score, for factor 4 of the instrument. The lowest values of factor 4, which refers to care plan, show the importance of increasing the quality of CT, with the aim of involving family members and/or caregivers in care planning. In this context, hospital staff and those responsible for the patient can actively participate in decisions related to the development and execution of a care plan, in addition to providing written instructions on the care needed after discharge. No statistically

significant differences were observed between the factors and overall score, in relation to the socio-demographic and clinical variables. However, there was an important relationship between cardiovascular diseases and the total CT score and factor 3. Cardiovascular diseases are among the most reported by patients in this study, and patients with chronic diseases tend to have a longer length of hospital stay, which explains lower scores for factor 3 and the correlation of some comorbidities with the scores of the instrument performed.

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## Collaborations

Tomazela M, Valente SH, Lima MADS, Bulgarelli AF, Fabríz LA, Zacharias FCM and Pinto IC declare that they contributed to study design, data analysis and interpretation, article writing, relevant critical review of the intellectual content and approval of the final version to be published.

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