



## Analysis of the Perroca Scale in Palliative Care Unit

Análise da Escala de Perroca em Unidade de Cuidados Paliativos  
Análisis de la Escala de Perroca en Unidad de Cuidados Paliativos

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### ABSTRACT

**Objective:** To analyze the complexity of nursing care with use of the Perroca scale in a Palliative Care Unit. **Method:** Retrospective descriptive study of quantitative analysis. **Results:** Between 2008 and 2016, the total of 2,486 patients were hospitalized, and their median length of hospital stay was 12 days. Of these patients, 1,568 had at least one Perroca scale evaluation. Nine hundred and ten patients (58%) were classified as minimal or intermediate care. Of these, 602 (66%) were discharged. As semi-intensive and intensive care were classified 658 (42%) patients, of whom 64% died and only 36% were discharged. **Conclusion:** The Perroca scale is a tool to identify patients with greater need for care and the possible prognosis for hospitalized patients.

### DESCRIPTORS

Palliative Care; Oncology Nursing; Patient Discharge; Disease Management; Nursing Assessment.

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## INTRODUCTION

The Patient Classification System (PCS) is widely used in hospital settings, and a management tool for planning nursing care. The PCS was created based on the need of health institutions to rationalize work, optimize human resources and dispensed materials with the purpose of assisting this process, and by grouping patients according to care complexity<sup>(1)</sup>.

PCS arose in the United States in the 1960s. Later, Brazilian researchers created and validated different classification instruments that were implemented in hospital settings, among which the Perroca Scale<sup>(2)</sup>. The authors emphasized its use to estimate human resources in nursing by ensuring a more equitable distribution of care and increasing hospital productivity and efficiency<sup>(2)</sup>. Its use has been recommended by the Federal Nursing Council (Portuguese acronym: COFEN) since 2004<sup>(3)</sup>. The Perroca Patient Classification Instrument<sup>(2)</sup> has 13 critical indicators based on basic human needs<sup>(4)</sup>, which are shown in Chart 1.

The Perroca scale<sup>(2)</sup> was implemented in the Hospital Conceição group in 2008 with guidance of the Risk

Management Committee. It is supposed to be applied upon patients' admission to hospitalization units, and should be updated every seven days and in case of significant changes in the clinical picture. The scale final score is divided into four classes corresponding to the types of care: minimal, intermediate, semi-intensive and intensive. The scale is filled out electronically and integrated into patients' medical record. The higher scores mean greater need for care.

Patient classification instruments (PCI) are guiding factors in the decision-making process of care management<sup>(5)</sup>. However, its use in nurses' professional practice has not been the object of national research, but rather the evaluations of the care profile and workload<sup>(6)</sup>.

The objective of the present study is to present a descriptive retrospective analysis of the hospitalizations in the Palliative Care Unit of the Hospital Nossa Senhora da Conceição (HNSC) by evaluating the complexity of care, using the Perroca scale<sup>(2)</sup>, as well as discharges and deaths that occurred in the period.

**Chart 1** – Perroca scale<sup>(2)</sup>.

Indicators	Score				
1 – Mental Status and Level of Consciousness	1	2	3	4	5
2 – Oxygenation	1	2	3	4	5
3 – Vital Signs	1	2	3	4	5
4 – Nutrition and Hydration	1	2	3	4	5
5 – Motility	1	2	3	4	5
6 – Locomotion	1	2	3	4	5
7 – Body Care	1	2	3	4	5
8 – Eliminations	1	2	3	4	5
9 – Therapy	1	2	3	4	5
10 – Health Education	1	2	3	4	5
11 – Behavior	1	2	3	4	5
12 – Communication	1	2	3	4	5
13 – Cutaneous-Mucous Integrity	1	2	3	4	5
<b>Score is the sum of points attributed to indicators</b>					
Minimal Care	13 to 26				
Intermediate Care	27 to 39				
Semi-intensive Care	40 to 52				
Intensive Care	53 to 65				

## METHOD

This is a retrospective descriptive study of quantitative approach. Continuous variables were described by mean and standard deviation or median (interquartile range), and categorical variables by absolute and percentage frequencies.

From the hospital records of patients hospitalized in the Palliative Care Unit at the Hospital Nossa Senhora da Conceição between January 2008 and December 2016, the following variables were analyzed: age, gender, Perroca scale classification<sup>(2)</sup>, time of hospitalization, previous hospitalizations and date of discharge/death. In

the Palliative Care Unit, patients are hospitalized with a diagnosis of advanced staging cancer and life expectancy of less than six months.

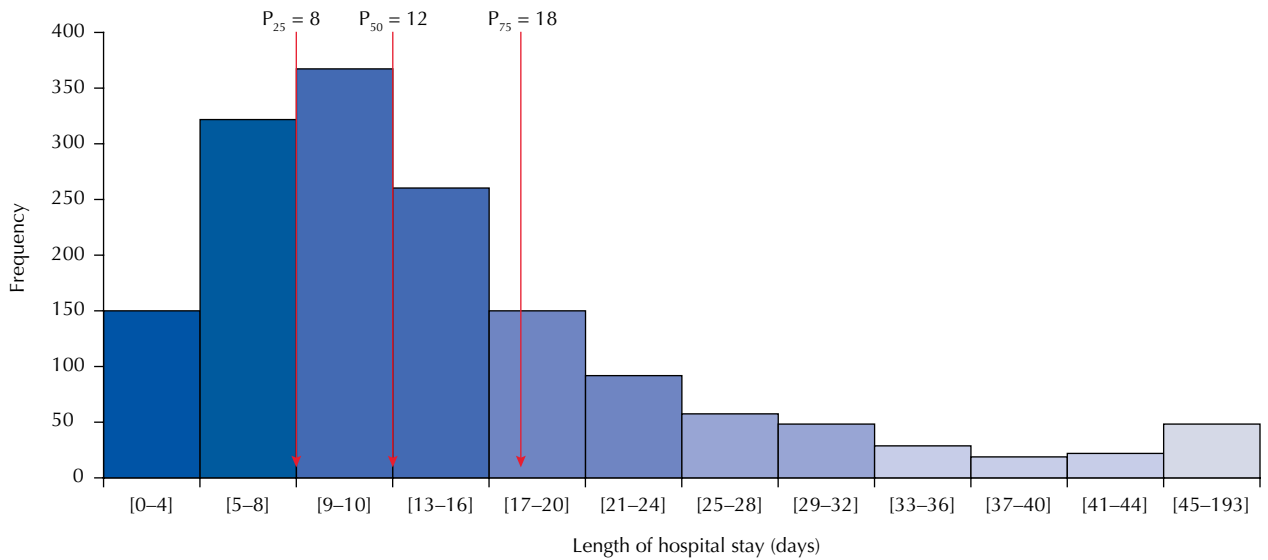
The research project was approved by the Research Ethics Committee of the Hospital Conceição under number 533.468, dated 02/05/2014.

## RESULTS

From 2008 to 2016, were admitted 2,486 patients to the Palliative Care Unit and their median length of hospital stay was 12 days. Figure 1 shows the number

of hospitalized patients in relation to length of hospitalization (days) and highlights the values of  $P_{25}$  and  $P_{75}$ . The hospitalization time of 75% of patients was less than 18 days, and 50% of hospitalized patients in

the periods were hospitalized for 10 days. There are discrepant points concentrated in the last category corresponding to the time between 45 and 193 days, and the total of 48 people.

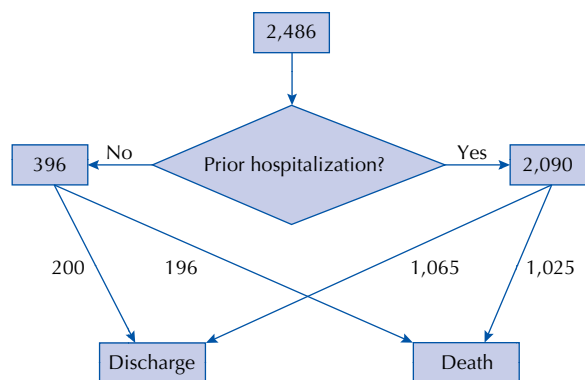


**Figure 1** – Length of hospital stay – Porto Alegre, Rio Grande do Sul, Brazil, 2008 to 2016.

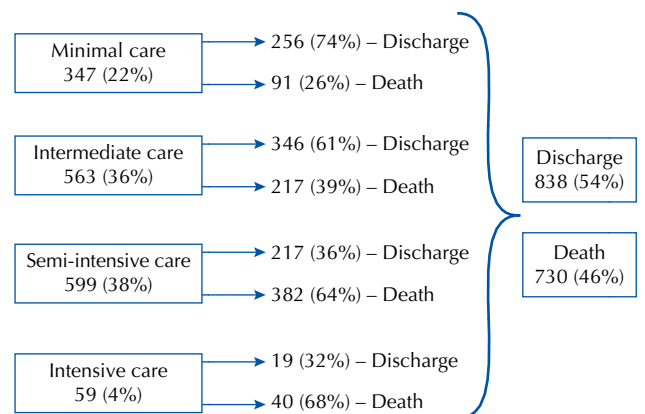
Figure 2 shows the presence of previous hospitalizations, the outcomes (discharge/death), and their absolute and relative frequency distributions. Regardless of prior hospitalization, 50% of patients were discharged, and in cases of previous hospitalization, 51% of them had such an outcome.

Of the total hospitalizations recorded, 1,568 had at least one evaluation by using the Perroca Scale<sup>(2)</sup>. Descriptive measures of distribution of the analyzed data are shown in Table 1. During the analyzed period, more than 50% of patients admitted to the service were discharged from hospital. Figure 3 shows the distribution

of care categories by the Perroca scale<sup>(2)</sup>. Among patients who were discharged, 582 (70%) required semi-intensive, intermediate or intensive care. Those classified as minimal or intermediate care accounted for 56% of patients, and about 66% of them were discharged. Patients classified as semi-intensive and intensive care accounted for 42% of analyzed data, of which 64% died, and only 36% were discharged. Therefore, it is noteworthy the observation that patients with intermediate and minimal care are those with the highest percentage of discharge, and those classified in intensive and semi-intensive care have a higher percentage of death.



**Figure 2** – Distribution of patients hospitalized in the Palliative Care Unit – Porto Alegre, Rio Grande do Sul, Brazil, 2008 to 2016.



**Figure 3** – Distribution by Perroca Scale.

**Table 1** – Population data – Porto Alegre, Rio Grande do Sul, Brazil, 2008 a 2016.

Variables	N = 1,568 patients
Age (years)	62.5 ± 13.3
<b>Gender</b>	
Female	808 (51.5%)
Male	760 (48.5%)
<b>Length of hospital stay (days)</b>	12. (8-18) <sup>1</sup>
<b>Outcome</b>	
Death	730 (46.5%)
Discharge	838 (53.4%)

1. Median and percentiles.

## DISCUSSION

Palliative care is the provision of comprehensive care for patients with progressive and incurable illnesses. The control of pain and other symptoms, and relief of psychological, social, and spiritual problems are crucial. The goal of Palliative Care is to provide the best possible quality of life for patients and their family members<sup>(7)</sup>. In this scenario, one of the main objectives of the hospital care team is to provide hospital discharge in order that patients live their last moments together with their relatives at home. Identifying patients who are more likely to be discharged can help institutional policies for providing the necessary resources and articulation with the city health care network. A discharge process in Palliative Care integrating multidisciplinary care already exists in other countries<sup>(8-9)</sup>, and this trend has been discussed in several services. In order to achieve this practice, there must be a space to record information as an integration link of care, which is provided by the Perroca scale<sup>(2)</sup>.

In Palliative Care, the choice of hospital discharge is complex because many patients have a few weeks of survival<sup>(10)</sup>. In a study evaluating chronic patients with hospitalization for at least 30 days, 45% had specific needs that prevented hospital discharge, and among these, 88% needed nursing care and life support therapies<sup>(11)</sup>. The Perroca scale classification<sup>(2)</sup> allowed the identification of patients with greater need of care by the health team,

and also those more likely to be discharged or die during that hospitalization.

In the present study, through the Perroca scale<sup>(2)</sup>, it was found that 70% of patients with hospital discharge required Intermediate, Semi-intensive and Intensive care. In a similar study performed in a tertiary hospital in Porto Alegre in an Internal Medicine and Specialties ward, patients were classified as requiring Minimal Care in 68% of evaluations<sup>(12)</sup>. This difference is explained by the severity of Palliative Care patients, who have numerous comorbidities and progressive deterioration of physical performance<sup>(10)</sup>, and these factors may be a barrier to hospital discharge.

After discharge, the multidisciplinary Palliative Care team stops acting in patients' daily care, and this process is called care transition. In the last six months of life, transitions are common, and failures in hospital discharge planning are associated with patients' decreased quality of life<sup>(13)</sup>.

Instruments for patient classification, including the Perroca scale<sup>(2)</sup>, were designed for the management's decision making regarding the dimensioning of the nursing team<sup>(6,14)</sup> or care planning during hospitalization<sup>(5,11)</sup>. In the national literature was found no evidence of its use for the classification of care needs in Palliative Care Units or in hospital discharge planning<sup>(15)</sup>.

There are some limitations in the present study. Since this is a retrospective study, there is no survey of other risk factors that could interfere in patients' probability of death or discharge, such as staging, types of neoplasms, reason for hospitalization. However, it offers the conclusion of a possible application of the Perroca scale<sup>(2)</sup> for the identification of patients at higher chance of death or discharge. To our knowledge, this is the first study evaluating the scale with possible use to establish prognoses of patients hospitalized in palliative care. Prospective and well-designed studies are necessary to confirm the hypothesis raised.

## CONCLUSION

The hospital discharge process is complex for patients in Palliative Care, as they have a short life expectancy and several needs to be met. The present study demonstrates the importance of using classification instruments such as the Perroca scale, to identify patients with greater need for care. Furthermore, this is the first study to address the possible use of the Perroca scale as a tool for prognosis of hospitalized patients with advanced cancer.

## RESUMO

**Objetivo:** Analisar a complexidade do cuidado de enfermagem com o uso da escala de Perroca em uma Unidade de Cuidados Paliativos. **Método:** Estudo retrospectivo descritivo com análise quantitativa. **Resultados:** Entre 2008 e 2016, foram internados 2.486 pacientes, a mediana de tempo de internação foi de 12 dias. Desses pacientes, 1.568 tiveram pelo menos uma avaliação pela escala de Perroca, classificados em cuidados mínimos ou intermediários (910, 58%), obtendo alta (602, 66%). Como cuidados semi-intensivos e intensivos, foram 658 (42%) pacientes, dentre os quais 64% morreram e apenas 36% receberam alta hospitalar. **Conclusão:** A escala Perroca é uma ferramenta para identificar os pacientes com maior necessidade de cuidados e de possível prognóstico para os pacientes internados.

## DESCRITORES

Cuidados Paliativos; Enfermagem Oncológica; Alta do Paciente; Gerenciamento Clínico; Avaliação em Enfermagem.

## RESUMEN

**Objetivo:** Analizar la complejidad del cuidado de enfermería con el uso de la escala de Perroca en una Unidad de Cuidados Paliativos. **Método:** Estudio retrospectivo descriptivo con análisis cuantitativo. **Resultados:** Entre 2008 y 2016, fueron ingresados 2.486 pacientes, la mediana de tiempo de estancia hospitalaria fue de 12 días. De esos pacientes, 1.568 tuvieron por lo menos una evaluación por la escala de Perroca, clasificados en cuidados mínimos o intermedios (910, 58%), obteniendo el alta (602, 66%). Como cuidados semintensivos e intensivos, fueron 658 (42%) pacientes, entre los que el 64% fallecieron y solo el 36% recibieron el alta hospitalaria. **Conclusión:** La escala de Perroca es una herramienta para identificar a los pacientes con mayor necesidad de cuidados y de posible pronóstico para los pacientes ingresados.

## DESCRIPTORES

Cuidados Paliativos; Enfermería Oncológica; Alta del Paciente; Manejo de la Enfermedad; Evaluación en Enfermería.

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