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INTEGRATIVE REVIEW OF THE LITERATURE

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FACTORS ASSOCIATED WITH EMERGENCY ROOM VISIT OR HOSPITALIZATION IN CARE ONCOLOGY HOME CARE: AN INTEGRATIVE REVIEW

Fatores associados à visita à emergência ou hospitalização em cuidados paliativos oncológicos domiciliares: uma revisão integrativa

Factores asociados a la visita a urgencias o a la hospitalización en cuidado atención oncológica a domicilio: una revisión integradora

Flávia Navi de Souza¹ 

Vanessa Gomes da Silva² 

Alexandre Sousa da Silva³ 

ABSTRACT

Objective: to identify the factors associated with the emergency visit or hospitalization of cancer patients in palliative home care. **Method:** integrative review in PubMed, LILACS, Web of Science and Embase. The question was “what factors are associated with visiting emergency services or hospitalization of cancer patients in palliative home care?”. Descriptors were neoplasms; palliative care; hospitalization; emergency medical services; home care services. Eligibility criteria were full text; between 2012 and 2022; English, Portuguese or Spanish language; adulthood. **Results:** 16 articles were selected. The most common causes of emergency room visits/hospitalization were pain, shortness of breath, infection, digestive symptoms, delirium, and poor general condition/fatigue. **Conclusion:** this study identified gaps in which palliative home care can be improved.

DESCRIPTORS: Palliative care; Neoplasms; Home care services; Emergency; Hospitalization.

¹ Universidade Federal do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil

² Programa em Ensino em Biociências e Saúde – IOC-Fiocruz, Rio de Janeiro, Rio de Janeiro, Brazil

³ Universidade Federal do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil

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Corresponding Author: Flávia Navi de Souza, E-mail: flavia_navi@yahoo.com.br

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RESUMO

Objetivo: identificar os fatores associados à visita à emergência ou hospitalização dos pacientes oncológicos em cuidados paliativos domiciliares. **Método:** revisão integrativa nas bases PubMed, LILACS, Web of Science e Embase. Perguntou-se “quais os fatores associados à visita a serviços de emergência ou hospitalização de pacientes oncológicos em cuidados paliativos domiciliares?”. Descritores foram neoplasias; cuidados paliativos; hospitalização; serviços médicos de emergência; serviços de assistência domiciliar. Critérios de elegibilidade foram texto na íntegra; entre 2012 e 2022; idioma inglês, português ou espanhol; idade adulta. **Resultados:** foram selecionados 16 artigos. As causas mais comuns de visita à emergência/hospitalização foram dor, falta de ar, infecção, sintomas digestivos, delirium e queda do estado geral/fadiga. **Conclusão:** este estudo identificou lacunas em que os cuidados paliativos domiciliares podem ser aprimorados.

DESCRITORES: Cuidados paliativos; Neoplasias; Serviços de assistência domiciliar; Emergência; Hospitalização.

RESUMEN

Objetivo: identificar los factores asociados a la visita a urgencias u hospitalización de pacientes oncológicos en cuidados paliativos domiciliarios. **Método:** revisión integrativa en PubMed, LILACS, Web of Science y Embase. La pregunta fue “¿qué factores se asocian con la visita a los servicios de emergencia o la hospitalización de pacientes oncológicos en cuidados paliativos domiciliarios?”. Descriptores fueron neoplasias; Cuidados paliativos; hospitalización; servicios médicos de emergencia; servicios de atención domiciliar. Los criterios de elegibilidad fueron texto completo; entre 2012 y 2022; idioma inglés, portugués o español; edad adulta. **Resultados:** se seleccionaron 16 artículos. Las causas más comunes de visitas a la sala de emergencias/hospitalización fueron dolor, dificultad para respirar, infección, síntomas digestivos, delirio y mal estado general/fatiga. **Conclusión:** este estudio identificó brechas en las que se pueden mejorar los cuidados paliativos domiciliarios.

DESCRIPTORES: Cuidados paliativos; Neoplasias; Servicios de atención domiciliar; Emergencia; Hospitalización.

INTRODUCTION

Cancer is the second leading cause of death worldwide, with great physical, emotional, and financial impact on the lives of patients, families, communities, and healthcare systems.¹ It also represents the leading cause of need for Palliative Care (PC) in adults worldwide.² Despite advances in health, many cases of cancer are diagnosed at an advanced stage, with little chance of cure.³

One of the main objectives of palliative oncology care is the identification and control of the main symptoms of patients with advanced cancer, which can be done in different scenarios, such as home, outpatient clinic, hospital units, exclusive palliative care units or long-stay institutions.⁴⁻⁵ The place where the patient wishes to receive care, including at the end of life, is usually at home, which requires preparation and structure to make this feasible.^{4,6-7} There are Home Care (HC) services specialized in PC oncology, whose benefits include favoring the relief of physical, psychological, social or spiritual signs and symptoms, reducing the demand for emergency care, avoiding unnecessary hospitalizations, reducing the death rate in the hospital environment and allowing patients to stay longer at home with their families, also reducing hospital costs.⁸⁻¹⁴

However, cancer patients in Home Palliative Care (HPC) may require care in the emergency room in situations of complications and/or decline in general condition, caused by the natural evolution of the disease, effects of anticancer therapy or by lack of symptom control.¹⁵⁻¹⁶

Faced with the proximity of death, adequate symptom control should be attempted in patients at their preferred location. Many

wish to avoid visiting the emergency room because of the suffering inherent in care and because it often results in hospitalization.¹⁷⁻¹⁹ Patient permanence at home and avoidance of Emergency Room Visit or Hospitalization (RVH) are considered quality criteria for end-of-life care.²⁰⁻²² In contrast, repeated visits to the emergency room, prolonged hospitalization, and death in the hospital are considered aggressive end-of-life care.²³ It is noteworthy that patient permanence at home is influenced by several factors, such as access to PC, caregiver comfort, symptom intensity, and patient preference.²⁴

This study aimed to identify in the literature which factors are associated with emergency department visits or hospitalization of cancer patients in HPC.

METHOD

The Integrative Literature Review (ILR) was used for data collection and bibliographic survey, aiming at the search, critical evaluation and synthesis of available evidence on the studied theme, in order to help in the direction of new research and in the improvement of health care.²⁵ The process of elaboration of the ILR covered six distinct stages, described below.

In the first step, the research question was defined, using the acronym PICO (population, phenomenon of interest, and context), where the population was represented by oncology patients in palliative care; the phenomenon of interest was the visit to the emergency room or hospitalization; and the context was related to home care. The research question, therefore, was, "what factors are associated with emergency department visitation or hospitalization of oncology patients in home palliative

care?" The search strategy involved structured vocabularies from the Descriptors in Health Sciences (DeCS) and Medical Subject Headings (MeSH), keywords and the Boolean operators "OR", "AND" and "NOT".

In the second step, a literature search was conducted through four electronic databases: PubMed/Medline, Latin American and Caribbean Literature on Health Sciences (LILACS), Embase, and Web of Science.

Different search strategies were used for each database. The Boolean phrase used for Pubmed search was: ("neoplasms" OR "neoplasm" OR "cancer" OR "tumor" OR "tumour" OR "malignant*" OR "malignant neoplasms" OR "malignant neoplasm" OR "neoplasia" OR "carcinoma" OR "oncol*") AND ("palliative care" OR "palliative medicine" OR "hospices" OR "hospice care" OR "palliative supportive care" OR "palliative therapy" OR "palliati*" OR "terminal*" OR "incurable" OR "dying" OR "end of life" OR "terminal care") AND ("house calls" OR "home visits" OR "home care services" OR "domiciliary care" OR "home care" OR "home health care services" OR "home palliative care" OR "home-based palliative care") AND ("emergencies" OR "emergency" OR "Emergency Services, Hospital" OR "hospital Emergency Services" OR "Services, Hospital Emergency" OR "Emergency Hospital Service" OR "Emergency Hospital Services" OR "Service, Emergency Hospital" OR "Services, Emergency Hospital" OR "Emergency, Hospital Service" OR "Emergency Units" OR "Emergency Unit" OR "Emergency Departments" OR "Department, Emergency" OR "Departments, Emergency"

OR "Emergency Department" OR "hospitalization" OR "After-hours" OR "out-of-hours" OR "unplanned hospital admission" OR "Unscheduled") NOT ("child*" OR "adolescent" OR "pediatric*" OR "paediatric*" OR "non-malignant*" OR "noncancer" OR "noncancer" OR "nonmalignant*").

The search was performed in January 2022 and repeated in June 2022. Inclusion criteria were: full text available in academic journals; publication within the last ten years; adult population; English, Portuguese, or Spanish languages. The exclusion criteria were: articles that did not answer the research question; studies with children/adolescents; studies with a mixture of oncologic and non-oncologic patients, in which oncologic patients represented less than half of the sample; review/case report studies; publications older than ten years; and languages other than English, Portuguese, and Spanish.

In the third step, the studies were categorized, with the organization of information and creation of a database. Information on title/year/country, objective, method and results was extracted and recorded in Microsoft Excel® spreadsheets and Microsoft Word® documents. Mendeley Reference Manager software was used to manage the references. The search flowchart was completed based on the PRISMA 2020 model, adapted by the authors.

The fourth stage consisted of reading the articles in their entirety, with evaluation and critical analysis of the pre-selected studies. In the fifth step, the results were interpreted and discussed. Suggestions were also made for future research and recommendations were proposed. Finally, in the sixth step, the synthesis

of knowledge was performed, with presentation in the form of this scientific article.

RESULTS

Through the database search, 921 studies were found: 357 in PubMed, 7 in LILACS, 401 in Embase, and 156 in Web of Science. After eliminating the duplicates, 795 studies remained for screening, of which 588 were excluded after applying the selection criteria. Title and abstract reading was performed for 207 studies, followed by the removal of 139 studies that were not pertinent to the studied topic. Sixty-eight studies were considered eligible to be read in their entirety, and 52 were excluded for not answering the research question. A total of 16 studies were included in the selection of this ILR, according to the PRISMA flowchart shown in Figure 1.

The main characteristics of the selected studies have been mapped in Table 1.

Eleven studies evaluated the causes of RVH. The main causes, according to the number of citations are: pain (eight); shortness of breath (seven); infection/fever (six); digestive symptoms (five); delirium, decreased general state/fatigue (three); hemorrhage, toxicity, family burden and ascites (two). Other factors cited in only one article were end-of-life care, neurological symptoms, renal failure, airway obstruction, social isolation, test performance, and dehydration/metabolic disorders. Most causes consisted of physical signs or symptoms presented by cancer patients in HPC. Pain was the cause with the highest number of citations in the studies, but it affected the highest percentage of patients in only two studies.^{15,29} Regarding the amount of patients affected by each cause, shortness of breath was the symptom that caused RVH in the highest percentage of patients.

Eight studies pointed out risk factors for RVH, the most cited being: shortness of breath and hematologic tumor (each cited in two articles).^{9,13,31} The other risk factors, cited in only one article were: pain, altered level of consciousness, gastrointestinal bleeding, male gender, genitourinary tumors, hepatocellular carcinoma, lung cancer, head and neck cancer, prostate cancer, end of life with male caregiver, married marital status, absence of HPC, holidays or night periods with no care available from the HPC team, cardiovascular problems, digestive problems, dehydration/metabolic disorders, and pneumonia.

Protective factors for RVH were mentioned in seven articles. Examples of this category are: HPC in the last 6 months of life, PC after hospital discharge, home nursing care in the last month of life, early initiation of palliative care, female caregiver or female spouse, access to HPC service with extended hours of operation and staff training for breathlessness control, integration between attending physician and on-call staff; presence of advance directives of will.

Data from studies on emergency department visits were not stratified separately from those on hospitalization, because many emergency department visits result in hospitalization¹⁸⁻¹⁹ and both situations negatively impact the lives of cancer patients.²³

Figure 1 – PRISMA flowchart of database search and study selection (adapted by the authors). Rio de Janeiro, RJ, Brazil, 2022

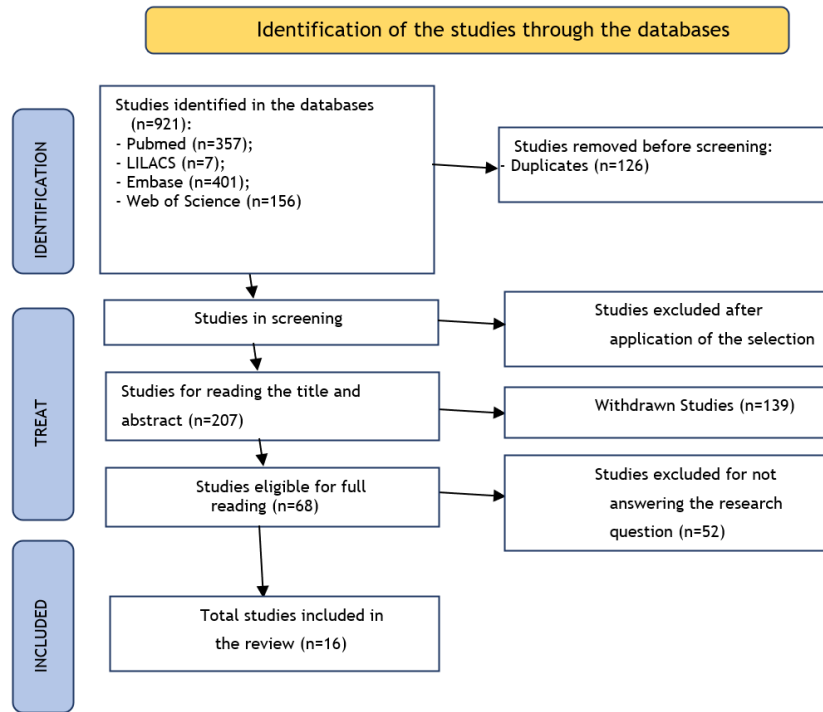


Chart 1 – Mapping of the main characteristics of the 16 selected studies. Rio de Janeiro, RJ, Brazil, 2022

Title/year/country	Goal	Method	Results
End-of-life care pathway of head and neck cancer patients: single institution experience ²⁶ Year: 2018 País: Finland	Assessing the role of PC for patients with head and neck cancer.	Retrospective.	The most common complications in patients were infection (also the most common cause of RVH), bleeding, delirium, and airway obstruction.
Enhanced home palliative care could reduce emergency department visits due to non-organic dyspnea among cancer patients: a retrospective cohort study ²⁷ Year: 2021 Country: Taiwan	Compare the outcome of two different approaches by HPC staff in controlling breathlessness.	Retrospective cohort.	The most common causes of emergency department visits were shortness of breath, pain, gastrointestinal symptoms, and fever. There was a reduction in emergency department visits for shortness of breath in the extended (seven days a week) HPC group.
End-of-Life Cancer Care: Temporal Association between Homecare Nursing and Hospitalizations ²⁸ Year: 2016 Country: Canada	To investigate the temporal relationship between nursing home care in reducing hospitalizations in the end-of-life phase.	Retrospective cohort.	HPC significantly reduced the rate of hospitalization in the last six months of life. Conventional HC done in the last month of life also protected against hospitalizations.
The Palliative-Supportive Care Unit in a Comprehensive Cancer Center as Crossroad for Patients' Oncological Pathway ²⁹ Year: 2016 Country: Italy	To evaluate how admission to palliative care units may influence the trajectory of patients with advanced cancer.	Prospective.	The most common reasons for hospitalizations were uncontrolled pain, opioid toxicity, anticancer treatment toxicity, and end-of-life care.
Palliative Care Unit at Home: Impact on Quality of Life in Cancer Patients at the End of Life in a Rural Environment ⁷ Year: 2022 Country: Spain	Study the impact of HPC on the quality of care for cancer patients.	Retrospective.	The absence of HPC increased the risk of emergency department visits, hospital admissions, and death in the hospital. The most common causes of hospitalizations were decreased general condition, shortness of breath, infection, pain, and toxicity.

Chart 1 – Cont.

Palliative home care and emergency department visits in the last 30 and 90 days of life: a retrospective cohort study of patients with cancer ¹³ Year: 2021 Country: Canada	To evaluate the association between HPC and emergency department visits in the 30 and 90 days before death.	Retrospective cohort.	In the last 30 and 90 days of life, patients who received home care by generalist teams or who did not receive home care were more likely to visit the emergency room.
Are emergency admissions in palliative cancer care always necessary? Results from a descriptive study ³⁰ Year: 2013 Country: Norway	Record the reasons for emergency admissions, assess symptom intensity at admission and discharge, and record interventions during hospitalizations	Prospective, descriptive.	Respiratory symptoms, gastrointestinal symptoms, and pain were the most common reasons for admissions, which converted to hospitalizations in most cases.
Palliative care needs of advanced cancer patients in the emergency department at the end of life: an observational cohort study ¹⁹ Year: 2020 Country: Netherlands	Provide information about emergency department visits for patients with advanced cancer at the end of life.	Retrospective observational study.	The most frequent signs and symptoms in the patients who sought emergency were shortness of breath, pain, and ascites.
The characteristics of advanced cancer patients followed at home, but admitted to the hospital for the last days of life ⁶ Year: 2016 Country: Italy	To know the characteristics of HC patients hospitalized in the last days of life and identify risk factors for hospitalization.	Retrospective, exploratory descriptive.	Patients with lung cancer, head and neck cancer, or prostate cancer were more likely to die in the hospital. Having a female caregiver increased the likelihood of dying at home.
Factors associated with emergency services use in Taiwanese advanced cancer patients receiving palliative home care services during out-of-hours periods: a retrospective ³¹ Year: 2018 Country: Taiwan	Investigate the factors that lead patients with advanced cancer to seek emergency care outside of HC service hours.	Case-control, retrospective.	40% of the emergency demand occurred outside of normal HPC hours and was associated with the presence of two of the following conditions: shortness of breath, altered level of consciousness, and gastrointestinal bleeding.
Effectiveness of palliative home-care services in reducing hospital admissions and determinants of hospitalization for terminally ill patients followed up by a palliative home-care team: a retrospective cohort study ⁹ Year: 2014 Country: Italy	To evaluate the effectiveness of HPC service in reducing hospitalization and identify factors that predict the likelihood that a patient treated at home will be hospitalized.	Retrospective cohort.	HPC patients had a higher chance of dying at home, a lower risk of hospitalization, and spent fewer days hospitalized in the last two months of life. The main risk factors for hospitalization were: shortness of breath; pain; hematologic tumors; hepatocellular carcinoma.
Cancer patients, emergencies service and provision of palliative care ¹⁵ Year: 2016 Country: Brazil	Describe the characteristics of cancer patients admitted to the emergency department, noting PC and HC coverage.	Prospective, cross-sectional.	The most prevalent symptom on emergency admission was pain. The most frequent cancers were cervical, breast and prostate, most of them in advanced stages.
Home hospitalization for palliative care: factors associated with unplanned hospital admissions and death in hospital ³² Year: 2021 Country: France	To describe the occurrence and factors associated with unplanned hospitalizations of cancer patients in end-of-life care at home.	Retrospective.	57.7% of patients had one or more unplanned hospitalizations. Most occurred for shortness of breath, infection, digestive symptom, delirium, pain, iatrogenic, bleeding, and cardiovascular event. HPC care after hospital discharge reduced the risk of hospitalization.
Reasons for transferral to emergency departments of terminally ill patients – a French descriptive and retrospective study ³³ Year: 2016 Country: France	Identify the reasons for patient transfers from home to emergency and assess whether or not these presentations could be avoided.	Retrospective.	The main causes for visiting the emergency room were: fatigue, social isolation, having tests done, shortness of breath, end of life, and pain.

Chart 1 – Cont.

End-of-life hospital referrals by out-of-hours general practitioners: a retrospective chart study ³⁴ Year: 2012 Country: Netherlands	Explore hospital referrals of palliative care patients who had contacted an on-call clinician	Retrospective descriptive.	Risk factors for hospital referral were: cancer, cardiovascular, digestive, and metabolic problems. Protective factors: nursing HC; sharing of clinical data between the attending physician and on-call cooperative. Most common causes of hospitalization were digestive problems, dehydration, and respiratory problems.
Predictors of emergency room visits or acute hospital admissions prior to death among hospice palliative care clients in Ontario: a retrospective cohort study ³⁵ Year: 2014 Country: Canada	To examine the predictors of RVH among patients in HPC.	Retrospective, descriptive cohort.	52.2% of patients had one or more RVH. Protective factors for RVH were: having advance directive of will, desire to die at home, unstable health, and increased use of formal health care services. Infections increased the risk of RVH.

DISCUSSION

The data from this ILR reinforce that RVH improve the quality of life of cancer patients, increase the length of stay at home and reduce the risk of RVH.^{7,9,13,15,28,32}

Despite the benefits offered by HPC, the percentage of cancer patients who resort to RVH is still high, either due to physical signs and symptoms inherent to the advanced stage of the disease;^{6,7,9,15,19,26-27,29-35} factors inherent to certain types of cancer;^{6,9,13,26} social/family factors;^{6,32-33} cultural factors or characteristics of the healthcare network.^{27,30,35} The increased risk of hospitalization in patients with hematologic tumors was demonstrated in two articles^{9,13} of this review coinciding with previous study data³⁶ in which patients with non-solid tumors were more likely to die in hospital, which was attributed to the existence of multiple treatment options, even in advanced stages of disease.

In the last six months of life, each week close to death was associated with increased risk of hospitalization.²⁸ In the end-of-life phase, several multidimensional factors may influence the decision to keep patient at home or in the hospital.⁶ Canadian study showed that patient's desire to die at home and existence of advance directives of will may play a protective role against RVH,³⁵ coinciding with previously described data.¹⁷

Many visits of terminally ill patients to the emergency department were considered potentially avoidable because they resulted in care that could have been performed at home.³³ Some selected studies pointed out strategies capable of preventing RVHs, such as training of the HPC team in the management of symptoms of patients at home,^{27,31} operation of the PC service in extended time (seven days a week)²⁷ and guidance of patients/family members to make telephone contact with the HC team before seeking emergency.³³ Telecare is an advantageous strategy for cancer patients in PC, as it facilitates the evaluation and control of symptoms at home, allows the adoption of proactive measures and reduces the demand for emergency services.³⁷⁻³⁸ The most common causes of emergency calls made by cancer patients were shortness of breath, pain, delirium, loss of consciousness and bleeding. These resemble those found in this RIL as the most frequent reasons for RVH of oncology patients in HPC. Another study also showed that there is a higher likelihood of an out-of-hours emergency visit to the HPC service in the

presence of two of these factors: shortness of breath, altered level of consciousness, or gastrointestinal bleeding.³¹

Other studies have evaluated health service-related conditions, such as the integration of HPC with primary health care that has been shown to be effective in reducing rates of RVH.^{27,30,33-34}

CONCLUSION

This IRL identified the main factors associated with RVH in HPC, represented by prevalent clinical signs and symptoms in patients with advanced cancer. These data may assist in guiding patients/family members and training HPC staff, optimizing care planning. However, the small sample size of studies in this review limits the power of generalization about the identified findings. Further studies are needed to expand understanding about RVH-related conditions, especially in the Brazilian HPC setting.

As an initial unfolding of this ILR, the researchers reformulated a screening instrument for oncology patients in HPC, based on warning signs and symptoms, i.e., those of more complex management at home. The first version of this instrument was developed by Silva VG and Souza FN in 2018 to stratify the priority of home care for oncology patients in a unique palliative care unit. Additional research is needed for evaluation, validation of use, and conveying the new version of this instrument.

REFERENCES

1. World Health Organization (WHO). WHO Cancer Resolution; Cancer prevention and control in the context of an integrated approach. 17th World Heal Assem. [Internet]. 2017 [cited 2022 sep 5]. Available from: <https://apps.who.int/iris/handle/10665/275676>.
2. Worldwide Hospice Palliative Care Alliance (WHPCA) [homepage in internet]. Global Atlas of Palliative Care. 2nd Edition. 2020 [cited 2022 sep 5]. Available from: <https://www.thewhpc.org/resources/global-atlas-on-end-of-life-care>.
3. Atty AT de M, Tomazelli JG. Cuidados paliativos na atenção domiciliar para pacientes oncológicos no Brasil. Saúde debate. [Internet]. 2018 [acesso em 05 de

- setembro 2022];42(116). Disponível em: <https://doi.org/10.1590/0103-1104201811618>.
4. Bittencourt NCC de M, Santos KA, Mesquita MG da R, Silva VG da, Telles AC, Silva MM da. Sinais e sintomas manifestados por pacientes em cuidados paliativos oncológicos na assistência domiciliar: uma revisão integrativa. *Esc. Anna Nery Rev. Enferm.* [Internet]. 2021 [acesso em 05 de setembro 2022];25(4). Disponível em: <https://doi.org/10.1590/2177-9465-EAN-2020-0520>.
 5. OhioHealth Hospice. Vamos falar de Cuidados Paliativos. *Soc Bras Geriatr e Gerontol.* [Internet]. 2014 [acesso em 05 de setembro 2022];17. Disponível em: <https://sbgg.org.br/wp-content/uploads/2014/11/vamos-falar-de-cuidados-paliativos-vers--o-online.pdf>.
 6. Mercadante S, Masedu F, Valenti M, Mercadante A, Aielli F. The characteristics of advanced cancer patients followed at home but admitted to the hospital for the last days of life. *Intern. emerg. med.* [Internet]. 2016 [cited 2022 sep 5];11(5). Available from: <https://doi.org/10.1007/s11739-016-1402-1>.
 7. Moncho MEI, Palomar-Abril V, Soria-Comes T. Palliative Care Unit at Home: Impact on Quality of Life in Cancer Patients at the End of Life in a Rural Environment. *Am J Hosp Palliat Med.* [Internet]. 2022 [cited 2022 sep 5];39(5). Available from: <https://doi.org/10.1177/10499091211038303>.
 8. Dhiliwal SR, Muckaden M. Impact of specialist home-based palliative care services in a tertiary oncology set up: A prospective non-randomized observational study. *Indian J Palliat Care.* [Internet]. 2015 [cited 2022 sep 5];21(1). Available from: <https://doi.org/10.4103/0973-1075.150170>.
 9. Riolfi M, Buja A, Zanardo C, Marangon CF, Manno P, Baldo V. Effectiveness of palliative home-care services in reducing hospital admissions and determinants of hospitalization for terminally ill patients followed up by a palliative homecare team: A retrospective cohort study. *Palliat. med.* [Internet]. 2014 [cited 2022 sep 5];28(5). Available from: <https://doi.org/10.1177/0269216313517283>.
 10. Enguidanos S, Rahman A, Fields T, Mack W, Brumley R, Rabow M, et al. Expanding access to home-based palliative care: A randomized controlled trial protocol. *J. palliat. med.* [Internet]. 2019 [cited 2022 sep 5];22(S1). Available from: <https://doi.org/10.1089/jpm.2019.0147>.
 11. Sutradhar R, Barbera L, Seow HY. Palliative homecare is associated with reduced high – and low-acuity emergency department visits at the end of life: A population-based cohort study of cancer decedents. *Palliat. med.* [Internet]. 2017 [cited 2022 sep 5];31(5). Available from: <https://doi.org/10.1177/0269216316663508>.
 12. Alonso-Babarro A, Astray-Mochales J, Domínguez-Berjón F, Gênova-Maleras R, Bruera E, Díaz-Mayordomo A, et al. The association between in-patient death, utilization of hospital resources and availability of palliative home care for cancer patients. *Palliat. med.* [Internet]. 2013 [cited 2022 sep 5];27(1). Available from: <https://doi.org/10.1177/0269216312442973>.
 13. Mracek J, Earp M, Sinnarajah A. Palliative home care and emergency department visits in the last 30 and 90 days of life: A retrospective cohort study of patients with cancer. *BMJ support. palliat. care (Online).* 2021 [cited 2022 sep 5];(1):1–10. Available from: <https://doi.org/10.1136/bmjspcare-2021-002889>.
 14. Chitnis XA, Georghiou T, Steventon A, Bardsley MJ. Effect of a home-based end-of-life nursing service on hospital use at the end of life and place of death: A study using administrative data and matched controls. *BMJ support. palliat. care (Online).* [Internet]. 2013 [cited 2022 sep 5];3(4). Available from: <https://doi.org/10.1136/bmjspcare-2012-000424>.
 15. Miranda B, Vidal SA, De Mello MJG, De Lima JTO, Rêgo JC, Pantaleão MC, et al. Cancer patients, emergencies service and provision of palliative care. *Rev. Assoc. Med. Bras.* (1954). [Internet]. 2016 [cited 2022 sep 5];62(3). Available from: <https://doi.org/10.1590/1806-9282.62.03.207>.
 16. Seow H, Barbera L, Sutradhar R, Howell D, Dudgeon D, Atzema C, et al. Trajectory of performance status and symptom scores for patients with cancer during the last six months of life. *J. clin. oncol.* [Internet]. 2011 [cited 2022 sep 5];29(9). Available from: <https://doi.org/10.1200/jco.2010.30.7173>.
 17. Barbera L, Taylor C, Dudgeon D. Why do patients with cancer visit the emergency department near the end of life? *Cmaj.* [Internet]. 2010 [cited 2022 sep 5];182(6). Available from: <https://doi.org/10.1503/cmaj.091187>.
 18. Seow H, Barbera L, Pataky R, Lawson B, O'Leary E, Fassbender K, et al. Does Increasing Home Care Nursing Reduce Emergency Department Visits at the End of Life? A Population-Based Cohort Study of Cancer Decedents. *J. pain symptom manage.* [Internet]. 2016 [cited 2022 jan 01];51(2). Available from: <http://dx.doi.org/10.1016/j.jpainsymman.2015.10.008>.
 19. Verhoef MJ, de Nijs E, Horeweg N, Fogteloo J, Heringhaus C, Jochems A, et al. Palliative care needs of advanced cancer patients in the emergency department at the end of life: an observational cohort study. *Support. care cancer.* [Internet]. 2020 [Cited 2022 sep 5];28(3). Available from: <https://doi.org/10.1007/s00520-019-04906-x>.
 20. Earle CC, Neville BA, Landrum MB, Ayanian JZ, Block SD, Weeks JC. Trends in the aggressiveness of cancer care near the end of life. *J. clin. oncol.* [Internet]. 2004 [cited 2022 sep 5];22(2). Available from: <https://doi.org/10.1200/jco.2004.08.136>.

22. Earle CC, Neville BA, Landrum MB, Souza JM, Weeks JC, Block SD, et al. Evaluating claims-based indicators of the intensity of end-of-life cancer care. *Int J Qual Heal Care*. [Internet]. 2005 [cited 2022 sep 5];17(6). Available from: <https://doi.org/10.1093/intqhc/mzi061>.
23. Soares LGL, Gomes R V., Palma A, Japiassu AM. Quality Indicators of End-ofLife Care Among Privately Insured People With Cancer in Brazil. *Am J Hosp Palliat Med*. [Internet]. 2020 [cited 2022 sep 5];37(8). Available from: <https://doi.org/10.1177/1049909119888180>.
24. Henson LA, Gomes B, Koffman J, Daveson BA, Higginson IJ, Gao W. Factors associated with aggressive end of life cancer care. *Support. care cancer*. [Internet]. 2016 [cited 2022 sep 5];24(3). Available from: <https://doi.org/10.1007/s00520-015-2885-4>.
25. Andersen SK, Croxford R, Earle CC, Singh S, Cheung MC. Days at home in the last 6 months of life: A patient-determined quality indicator for cancer care. *J. oncol. pharm. pract.* (Online). [Internet]. 2019 [cited 2022 sep 5];15(7). Available from: <https://doi.org/10.1200/jop.18.00338>.
26. Mendes K, Silveira R, Galvão C. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto & contexto enferm*. [Internet]. 2008 [acesso em 05 de setembro 2022];17(4). Disponível em: <https://doi.org/10.1590/S0104-07072008000400018>.
27. Heinonen T, Loimu V, Saarilahti K, Saarto T, Mäkitie A. End-of-life care pathway of head and neck cancer patients: single-institution experience. *Eur Arch Oto-Rhino-Laryngology*. [Internet]. 2018 [cited 2022 jan 01];275(2). Available from: <http://dx.doi.org/10.1007/s00405-017-4843-x>.
28. Hsu HS, Wu TH, Lin CY, Lin CC, Chen TP, Lin WY. Enhanced home palliative care could reduce emergency department visits due to non-organic dyspnea among cancer patients: a retrospective cohort study. *BMC palliat. care*. [Internet]. 2021 [cited 2022 sep 5];20(1). Available from: <https://doi.org/10.1186/s12904-021-00713-6>.
29. Seow H, Sutradhar R, McGrail K, Fassbender K, Pataky R, Lawson B, et al. End-of-Life Cancer Care: Temporal Association between Homecare Nursing and Hospitalizations. *J. palliat. med*. [Internet]. 2016 [cited 2022 sep 5];19(3). Available from: <https://doi.org/10.1089/jpm.2015.0229>.
30. Mercadante S, Adil C, Caruselli A, Ferrera P, Costanzi A, Marchetti P, et al. The palliative-supportive care unit in a comprehensive cancer center as crossroad for patients' oncological pathway. *PLoS ONE*. [Internet]. 2016 [cited 2022 sep 5];11(6). Available from: <https://doi.org/10.1371/journal.pone.0157300>.
31. Hjermland MJ, Kolflaath J, Løkken AO, Hanssen SB, Normann AP, Aass N. Are emergency admissions in palliative cancer care always necessary? Results from a descriptive study. *BMJ Open*. [Internet]. 2013 [cited 2022 sep 5];3(5):e002515. Available from: <https://doi.org/10.1136/bmjopen-2012-002515>.
32. Kao YH, Liu YT, Koo M, Chiang JK. Factors associated with emergency services use in Taiwanese advanced cancer patients receiving palliative home care services during out-of-hours periods: A retrospective medical record study. *BMC palliat. care*. [Internet]. 2018 [cited 2022 sep 5];17(1). Available from: <https://doi.org/10.1186/s12904-018-0302-8>.
33. Gamblin V, Prod'homme C, Lecoivre A, Bimbai AM, Luu J, Hazard PA, et al. Home hospitalization for palliative cancer care: factors associated with unplanned hospital admissions and death in hospital. *BMC palliat. care*. [Internet]. 2021 [cited 2022 sep 5];20(1). Available from: <https://doi.org/10.1186/s12904-021-00720-7>.
34. Cornillon P, Loiseau S, Aublet-Cuvelier B, Guastella V. Reasons for transferral to emergency departments of terminally ill patients – A French descriptive and retrospective study. *BMC palliat. Care*. [Internet]. 2016 [cited 2022 jan 01];15(1). Available from: <http://dx.doi.org/10.1186/s12904-016-0155-y>.
35. De Korte-Verhoef MC, Pasman HRW, Schweitzer BP, Francke AL, Onwuteaka-Philipsen BD, Deliens L. End-of-life hospital referrals by out-of-hours general practitioners: A retrospective chart study. *BMC fam. pract*. [Internet]. 2012 [cited 2022 sep 5];13. Available from: <https://doi.org/10.1186/1471-2296-13-89>.
36. Salam-White L, Hirdes JP, Poss JW, Blums J. Predictors of emergency room visits or acute hospital admissions prior to death among hospice palliative care clients in Ontario: A retrospective cohort study. *BMC palliat. care*. [Internet]. 2014 [cited 2022 sep 5];13(1). Available from: <https://doi.org/10.1186/1472-684x-13-35>.
37. Gomes B, Higginson IJ. Factors influencing death at home in terminally ill patients with cancer: Systematic review. *Br. med. j*. [Internet]. 2006 [cited 2022 sep 5];332(7540). Available from: <https://doi.org/10.1136/bmj.38740.614954.55>.
38. Hennemann-Krause L, Lopes AJ, Araújo JA, Petersen EM, Nunes RA. The assessment of telemedicine to support outpatient palliative care in advanced cancer. *Palliat. support care*. [Internet]. 2015 [cited 2022 sep 5];13(4). Available from: <https://doi.org/10.1017/s147895151400100x>.
39. Silva VG da, Telles AC, Guimarães N de PA, Souza FN de, Campo LL, Bittencourt NCC de M, et al. A propulsão do teleatendimento no cuidado paliativo oncológico domiciliar durante a pandemia de COVID-19. *Res Soc Dev*. [Internet]. 2022 [acesso em 05 de setembro 2022];11(5):e35711528300. Disponível em: <http://dx.doi.org/10.33448/rsd-v11i5.28300>.
40. Mercadante S, Porzio G, Valle A, Aielli F, Costanzo V, Adile C, et al. Emergencies in patients with advanced cancer

followed at home. J. pain symptom manage. [Internet]. 2012 [cited 2022 jan 01];44(2). Available from: <http://dx.doi.org/10.1016/j.jpainsymman.2011.07.016>.