PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (see an example) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Are emergency admissions in palliative cancer care always necessary? Results from a descriptive study
AUTHORS	Hjermstad, Marianne; Kolflaath, Jan; Løkken, Aud; Hanssen, Sjur; Normann, Are; Aass, Nina

VERSION 1 - REVIEW

REVIEWER	Sebastian von Hofacker, MD Consultant in Palliative Medicine Sunniva Centre for Palliative Care Haraldsplass Deaconess Hospital Ulriksdal 6, 5009 Bergen, Norway Centre of excellence for Palliative Care, Western Norway Haukeland University Hospital Haukelandsbakken 2, 5021 Bergen, Norway No competing interests
REVIEW RETURNED	21-Jan-2013

THE STUDY	As the authors mention themselves, were patient functional status (WHO/ECOG) and Karnosfsky index not systematically recorded on admission and therefore not reported. These 2 measures are important descriptors for the palliative cancer population.
RESULTS & CONCLUSIONS	On page 11 are conflicting numbers reported for "single primary reasons" and "most frequent reasons" for admission. page 12: "depot tablets" should be "slow release" and opiod "rotation" should be changed to opiod "switch" (Use of opioid analgesics in the treatment of cancer pain: evidence-based recommendations from the EAPC. Feb 2012) Key point: patient perception of preferred place and competancy of care were not reported in numbers (page 4 & 5: "some, most frequent, many")
GENERAL COMMENTS	I wonder if Lovisenberg is a "Deaconess" Hopsital?! Haraldsplass is supposed to call itself "Deaconess".

REVIEWER	Dr. Elaine Wallace, Consultant Physician in Palliative Medicine, Dochas Centre, Our Lady of Lourdes Hospital, Drogheda, Co. Louth, Ireland

	I have no conflicts of interest
REVIEW RETURNED	29-Jan-2013

GENERAL COMMENTS	This is a relevant article that deals with an interesting and very important topic. It is clearly laid out with clearly defined aims and clearly defined inclusion and exclusion criteria. The references included are also well chosen and up to date. I would agree that emergency admissions to hospital in palliative care may not always be necessary. I am not sure however, if the authors give full justification throughout the paper as to how they arrived at this conclusion in this instance. In order to say that emergency department presentations are not necessary it is necessary to establish: a) What were the indications/reasons for presentation. b) What were the interventions performed for each of the indications/reasons for presentation. c) Whether these interventions were in fact necessary for each of the indications. d) If so, could these interventions have been performed in another setting. e) If so, where. I believe that these steps are not followed or elaborated on sufficiently in the paper and while I do agree with their key messages and conclusion I feel that there is not enough justification given as to how the authors reached these conclusions. To improve the quality of this paper I would suggest addressing the above steps. Please address also: 1) Further clarification with regard to the specific services provided to the patient and families by the palliative care. While we are told that SOF had palliative care services and LDS has a specialist palliative care unit, we are not told whether all the patients included in the paper had palliative care input at home, how often they were seen and when was the last visit before they were admitted. This information, if available would be useful to the reader. 2) Define tumour-directed treatment? Chemotherapy/radiotherapy/hormone treatment etc. 3) In the abstract, age is given as mean. In the body of the text age is given as median, with two different medians given (66 in text, 67.5 in table 1). Please review. 4) Were any of the patients admitted to the ICU of the hospitals? This is pertinent with regard to whether the presentation was necessary. 5) Please give further clarification to the following statements: According to the patients' charts, the single primary reasons for admittance were gastrointestinal problems (n=15), dyspnoea (n=14) and pain (n=7) although the majority of the patients had multiple symptoms.

According to the admission letters and patient charts, the most frequent reasons for hospitalization were pain (n=9), nausea/vomiting (n=9), pneumonia, lung symptoms including dyspnoea (n=13) and reduced performance status (n=5).

Further elaboration on the reasons behind the admission would be useful. It is difficult to determine if a visit to the emergency department is necessary or not unless the reasons for this are clear. A table/figure outlining the reasons would be beneficial.

6) Please give clarification with regard to the patients with pain. The following sentences are unclear to the reader as to how many patients in fact had pain:
According to the patients' charts, the single primary reasons for admittance were gastrointestinal problems (n=15), dyspnoea (n=14) and pain (n=7) although the majority of the patients had multiple symptoms.

According to the admission letters and patient charts, the most frequent reasons for hospitalization were pain (n=9), nausea/vomiting (n=9), pneumonia, lung symptoms including dyspnoea (n=13) and reduced performance status (n=5).

Pain was prominent, and pain-related procedures were performed in all but seven cases. (? contradiction to the above sentences?)

Please define what is meant by 'gastrointestinal problems'.

7) Please clarify the following sentence:
The main reasons for admittance in these cases (? for patients who presented with pain?? Please define) were dyspnoea (n=3), reduced performance status (n=2), and problems swallowing (n=2).

8) It was difficult to establish what the indications for the 'non-standard' interventions were (xrays, MRI, surgery etc) 'Standard' interventions such as hydration, oxygen etc. were shown to be administered more frequently than 'non-standard' interventions in this study and the authors concluded that in many cases procedures such as these may well be administered in the primary health care sector. Yes indeed they may be given in the primary sector but how many of these patients who had the 'standard' interventions performed also had one of the non-standard interventions performed. A table with the presenting symptom and interventions performed for each patient may give more clarity as to how many of the presentations could have been avoided or dealt with in another manner.

9) What level of advance care planning is commonly used by patients in Norway? Is it typical to talk about preference for hospitalizations vs. death at home? This also is pertinent.

10) A copy of the structured interview questions as an appendix would be useful.

11) Please ensure that when figures are given, both numbers and percentages are given together to maintain consistency throughout the paper.

12) Please clarify the following:

	The majority of patients preferred hospital admission to other places (what other places?) in the actual situation (Please define). I enjoyed reading the paper. I think others reading it would also enjoy it and find it of interest but revisions of the paper would be needed. I hope this is of benefit.

REVIEWER	Camilla Zimmermann, MD, PhD, FRCPC Associate Professor, Department of Medicine, and Chair, Supportive Care, University of Toronto Head, Palliative Care Program, Princess Margaret Cancer Centre, University Health Network
REVIEW RETURNED	03-Feb-2013

GENERAL COMMENTS	This study is a descriptive account of emergency admissions of cancer patients to two Norwegian urban secondary care hospitals. Forty-four patients with cancer (50 admissions) were included. Findings were that lung symptoms, nausea-vomiting and pain were the most frequent reasons for admission and simple interventions such as hydration, bladder catheterisation and oxygen therapy were usually necessary. One third of patients would have preferred treatment at another site, provided that the quality of care was similar. The authors conclude that with better organization of care, more care could be provided at home, reducing the need for emergency admission. The study is of value but is limited by its small sample size. I have the following comments for consideration: 1. In the Introduction, the following study is relevant and should be included: Barbera L, Taylor C, Dudgeon D. Why do patients with cancer visit the emergency department near the end of life? CMAJ. 2010 Apr 6;182(6):563-8 2. It would be helpful to know how many emergency admissions in total there were for the hospitals in the study, during the study period, so that one would know what percentage of the total admissions the 44 patients with advanced cancer represented. 3. Inclusion criteria included anticipated survival of less than one year. Who assessed this? 4. Has the Norwegian version of the ESAS (which contains some items not on the original and omits the drowsiness item) been validated? If so this should be indicated and a reference given. 5. The Results section contains a lot of text and it may be helpful to add an additional table for some of the data from the “emergency admissions” and “examinations and interventions” and/or “patient interviews” (quantitative data) sections. 6. Where percentages are given in the Results section, numbers should consistently be given as well.

	7. In the Results section, the free-form comments provided by the participants are useful but should be presented such that the reader is able to assess how representative they were overall. Where there were only a few respondents who raised a certain issue, this was indicated by providing numbers. However, exact numbers should also be provided for the "most frequently raised comment" (raised by how many?) of doubts about home services and the "many patients" (how many patients?) who said they would have preferred to get procedures done at home. 8. In the Conclusion it is stated that the "feeling of being safe in hospital was prominent". However, this was expressed only by 10/44 patients. I would suggest modifying this conclusion accordingly. 9. I would suggest changing the title of the paper to make it clear that the study is in a cancer population. For example, "Emergency admissions in palliative cancer care may not always be necessary…." 10. Although generally well written, the manuscript would benefit from further English editing. At times, the meaning of sentences may not be what was intended. Some examples are given below: In the abstract and text, it is stated, "nearly one third would have preferred treatment at another site, given that the quality of care was similar". The authors may actually mean, "… provided that the quality of care was similar". In the Key Messages, suggest changing "Palliative care emergencies not always necessary, nor strictly medically indicated" to "Palliative care emergency admissions…" In the text, "emergency admittances" are frequently referred to. I would suggest changing this throughout the text to "emergency admissions".

VERSION 1 – AUTHOR RESPONSE

Reviewer no. 1

1. Comment. The first reviewer comments on the lack of reporting on ECOG / Karnofsky performance status scores.

Response. We certainly agree that this is useful and important information in relation to the planning of medical interventions and in relation to survival. However, these measures were not systematically assessed upon admission and were therefore not reported. This was already acknowledged as a limitation in the previous version, in one of the first paragraphs on page 19.

2. Comment. The reviewer points out that there are conflicting numbers reported for "single primary reasons" and "most frequent reasons" for admission on page 11.

Response. We agree that the way the numbers were presented was unclear, and the paragraph has been revised. The numbers listed on top of the page, refer to the symptoms that were given in the admission letters that were completed by the doctors who were responsible for the emergency admissions. However, as was stated in the methods section, we also examined the hospitals' patient charts with respect to cause of admission. This information was registered in emergency department (ED) by the attending doctors examining the patients, and did not correspond 100% to the reasons in the admission letters.

We agree that this may be confusing, and have decided to present only one set of data on this,

namely the one from the charts. In most cases (72%), two symptoms were registered in the ED, as presented on page 11. Consequently the entire section has been revised. Also, reviewer no. 2 and 3 wanted some more of the results presented as a figure or table. Therefore, we have inserted an additional figure (now Figure no. 1, page 11) presenting these data.

3. Comment. The reviewer recommends changing the wording regarding opioid medications, to comply with the evidence-based recommendations from EAPC, dated February last year.
Response. We have followed the recommendations and changed "depot tablets" to "slow release" and opiod "rotation" to opiod "switch" on page 13.

4. Comment. The reviewer misses information about the exact number of patients who expressed their preferences with regard to preferred place of care and competency of care.
Response. The exact numbers have been inserted on page 15/16.

5. Comment. The reviewer comments on the English name for Lovisenberg Hospital, as it does not correspond to another hospital with a similar organisation.
Response. We have contacted the hospital’s information department, and the correct name is Lovisenberg Diakonale Hospital, as the institution regards the first two words as a given name, and has decided to translate the last word only (“sykehus” in Norwegian) to Hospital.

Reviewer no. 2
First, we would like to thank the reviewer for the very positive comments regarding our manuscript, and the time that she has devoted to make the manuscript better. We hope that our responses are satisfactory.
The first overall comment by the reviewer is related to the following 5 issues:
a) What were the indications/reasons for presentation, b) What were the interventions performed for each of the indications/reasons for presentation, c) Whether these interventions were in fact necessary for each of the indications, d) If so, could these interventions have been performed in another setting, e) If so, where?
We have responded to all comments raised by all reviewers in this response letter, and believe that by doing so, most of the issues raised above have been sufficiently taken care of. However, some of the interventions that are more or less part of the routine in an emergency department may not be necessary from a medical point of view, strictly speaking, such oxygen therapy that is frequently administered. Also, it is difficult to evaluate the medical appropriateness of all interventions for the individual patient in hindsight. In spite of institutional treatment protocols, part of the medical judgment is also related to subjective decisions by the health care providers. Furthermore, palliative care patients often have fluctuations in the symptom intensity, leading to interventions that may not be captured by a limited registration form.
It should also be remembered that this study was a small descriptive study aiming to aid in the planning of palliative care in two Norwegian acute care local hospitals, as stated on page 5. Also as stated at the bottom of page 18, the most important issue raised is not whether hospital admission was indicated per se, but if hospital admission as an emergency case was most appropriate for getting necessary medical care. Following this, we have suggested how this could be avoided. We are well aware of the limitations of this study, as has been pointed out up-front and in the discussion part.
Again, we thank the reviewer for the very appropriate comments that certainly helped improving the paper.
1. Comment. The reviewer would like to see a further clarification with regard to the specific services provided to the patient and families by the palliative care teams.
Response. We agree that more specific information on this would be interesting. However, the details on use of home care were limited to a number of dichotomous questions about the most frequent home care services available in the community. Thus, there is no data on the exact amount of help

received in the home, the degree of specialisation of the home care nursing team etc. As this information would be interesting in relation to the actual need for emergency admissions, we have added this to the paragraph on limitations in the discussion part, page 20. Also, a clarification of the content of the variable about care at home has been added to the methods section under instruments, page 7/8.
2. Comment. The reviewer asks for a definition of tumour-directed treatment.
Response. This included chemotherapy, radiotherapy, hormonal therapy and biological agents. This has been added to the methods section on page 6. We have provided numbers and specifications on this also in Table 1.

3. Comment. The reviewer points out that there are inconsistencies in reporting of median age in Table 1 and in the body of the text.
Response. The correct value for median age is 66 as given in the text. Corrections are made to the table.

4. Comment. The reviewer wants to know if some patients were admitted to the ICU.
Response. None of the patients went directly to the ICU upon admission, but one was transferred after two days due to treatment related complications. Details are presented on page 13.

5. Comment. In line with the comments from the other two reviewers, the reviewer wants a clarification on the numbers regarding reason for admission.
Response.
Please see the response to reviewer no 1. The requested figure has been inserted on page 11.

6. Comment A. The reviewer wants information about the number of patients with pain and finds that the following statement; ..”pain was prominent, and pain-related procedures were performed in all but seven cases” as this contradicts with the numbers that were given pain as a reason for admission (n=7).
Response. We do not completely agree with the reviewer in this. First, the numbers that were given in the original manuscript regarding pain, referred to the reasons for the emergency admissions. As most patients had multiple symptoms, pain may not have been the most prominent symptom when contacting a doctor prior to the admission to the ED.
However, this paragraph has been fully revised according to recommendations from all reviewers, showing that pain was registered in 13 of the cases, page 11. However, it is well-known that adequate pain management often reduce the intensity of other symptoms. The fact that 2/3 used strong analgesics upon admission substantiates that pain was a problem (page 13). This is further supported with the most frequent pain related interventions being a change in the analgesic regimen that has now been added to figure 2.
6. Comment B. The reviewer wants a definition of ‘gastrointestinal problems’.
Response. The entire paragraph on reasons for the emergency admissions has been revised, and an explanation related to gastrointestinal problems has been inserted on page 15, and also in the footnote below Figure 1.

7. Comment. The reviewer points to an unclear message regarding “these patients” on page 13.
Response. An extra word, “seven”, has been added, that clarifies this.

8. Comment. The reviewer comments on the non-standard interventions (X-ray, MRIs etc.) and suggests making a table for all admissions, listing the symptoms and interventions per patient.
Response. We have gone through the files, and decided to provide some more information regarding this issue in the manuscript, instead of inserting a detailed table. Reasons for surgery were already given in the previous version of our manuscript. The fact that most patients were admitted for gastro-intestinal and lung problems, corresponds well with X-rays and CT-scans being the most frequent

procedures, and also with the interventions in Fig 2, showing that hydration and oxygen therapy were frequent. Also, some (six) patients went through none of these procedures, while only one had all four done, as inserted on page 13. We have decided to elaborate no further on this.
9. Comment. The reviewer wants more information about how advance care planning is carried out in Norway.
Response. Formal advanced care planning is not routinely discussed with the patients and their relatives in Norway. However, elements from such plans are often part of the conversations and in the follow-up of palliative care patients. This has been added to the methods section, page 6.
10. Comment. The reviewer suggests adding the structured interview as appendix to the manuscript.
Response. We have discussed this and decided to provide some more details about the answer categories in the methods section on page 7/8, rather than uploading the patient interview form.

11. Comment. The reviewer recommends providing numbers and percentages together consistently throughout the paper.
Response. We have followed the recommendations and made the necessary corrections
12. Comment. The reviewer wants a clarification as to what is meant by other places of care in relation to patient preferences.
Response. We have made a clarification of what is meant in the methods section on page 7/8, and also in the results part on page 15.

Reviewer no. 3
1. Comment. The reviewer suggests adding a reference regarding visits to the ER by cancer patients.
Response. We have read the article and found it relevant for our manuscript. It has been added to the introduction page 4, and also referred to in the discussion section, page 17. All references and the reference list have been updated accordingly.

2. Comment. The reviewer wants to know how many emergency admissions there were in total for the two hospitals during the study period
Response. Unfortunately, this is a variable that was not registered by the study personnel, and which is difficult to retrieve retrospectively. However, as stated on page 20, all emergency cancer patients were considered for inclusion in this period.

3. Comment. The reviewer asks about the assessment of anticipated survival that was one of the inclusion criteria
Response. Estimated survival was assessed by the attending oncologist prior to inclusion, as was already stated on page 6, middle part.

4. Comment. The reviewer asks about the validation of the Norwegian version of the ESAS that was used.
Response. The ESAS version that was used is the most frequently used version in all Norwegian palliative care units/centres and also the one that is recommended in the official Norwegian National Standard for Palliative Care. However, the forward / backward translation and the validation process have not been published as a journal article.

5. Comment. The reviewer suggests presenting some more of the results as a table /figure.
Response. We have added a figure to the manuscript; please also see response no. 2 to reviewer no. 1

6. Comment. The reviewer recommends giving numbers alongside the percentages in the results section.
Response. We agree with this and have made the necessary changes throughout the results section.

7. Comment. This comment is related to the representativity of the free comments, and the number of patients who raised the different issues.
Response. This relates to comment no. 4 by reviewer no. 1. To aid in the interpretation of this, we have inserted numbers of all comments cited

8. Comment. The reviewer suggests modifying the conclusion, as only about 23% of the patients expressed that they felt safer in hospital.
Response. We agree with this, and have changed this in line with the reviewer's suggestion.

9. Comment The reviewer also suggests changing the title of the paper to make it clear that the study is in a cancer population.
Response. We certainly agree with this, and have changed the title.

10. Comment. The reviewer recommends further English editing. She also suggests changing emergency admittances" to "emergency admissions" throughout the text, and changing the wording in the Key Messages.
Response. The manuscript has been revised by a native English speaker. The suggestions by the reviewer have been adhered to.

VERSION 2 – REVIEW

REVIEWER	Dr. Elaine Wallace Consultant in Palliative Medicine Louth and Meath Specialist Palliative Care Services Our Lady of Lourdes Hospital Drogheda Co.Louth Ireland
REVIEW RETURNED	21-Apr-2013

GENERAL COMMENTS	Many thanks to the authors for addressing the comments made previously on their manuscript. All of the comments have been addressed appropriately. The revised manuscript is more clear and comprehensive and of a higher standard for publication

REVIEWER	Camilla Zimmermann, MD, PhD, FRCPC Head, Palliative Care, University Health Network Associate Professor, Department of Medicine, University of Toronto Toronto, Ontario, Canada I have no competing interests.
REVIEW RETURNED	29-Mar-2013

- The reviewer completed the checklist but made no further comments.