

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Preventable emergency admissions of older adults: A observational mixed-methods study of rates, associative factors and underlying causes in two Dutch hospitals.
AUTHORS	van den Broek, Steef; Heiwegen, Nikki; Verhofstad, Margot; Akkermans, Reinier; van Westerop, Liselore; Schoon, Yvonne; Hesselink, Gijs

VERSION 1 – REVIEW

REVIEWER	Peter May Trinity College Dublin, Ireland
REVIEW RETURNED	05-Jun-2020

GENERAL COMMENTS	<p>Thanks for the opportunity to review this paper on avoidable ED admissions in two Dutch hospitals.</p> <p>My comments are those of a researcher and methodologist of health care use among older people. I have no clinical qualifications and have not attempted to assess the rigour of the PEA-identification system. I leave that for others.</p> <p>I found the rationale, design, execution and presentation for the most part very good, and I have only minor comments.</p> <p>Here are my comments:</p> <p>1 Study design Recommend a little more clarity on the exact design. The title and abstract say, retrospective mixed-methods study. I take this to mean that after the study period you went back to routinely collected data, identified eligible admissions, extracted their individual-level data (for quant data) and approached their attending physicians (for qual data).</p> <p>But in the text itself the word 'retrospective' appears only once, in the introduction, and then in relation to other studies. When it comes to your own study (Methods>Design), you use the phrase "comparative cohort study" and talk of the data being "collected".</p> <p>Normally it's clearest to describe primary data as being collected, secondary data as being accessed or extracted. I am not sure that this is a comparative cohort study; you have one cohort (people admitted to hospital via the ED aged 70+).</p> <p>It's not clear in 'Study sample and sampling' if you are picking the quant variables from a list of routinely collected data or if you specified these data fields and collected them yourselves. When I</p>
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	<p>look at Table 1, many variables I expect to be collected routinely but some perhaps not (e.g. informal care at home) or perhaps only via data linkage (e.g. polypharmacy).</p> <p>When you introduce the qual data collection ('Identification of physicians' perceived causes for PEAs') you are approaching the doctors 1-3 days after admission. So you are identifying them prospectively through EMRs and clinical notes, and in a lot of cases the patients haven't even been discharged. This is not a retrospective design.</p> <p>Please clarify in your title, abstract and methods, where do quant data come from, when were they accessed, did you have to link to more than one database?</p> <p>Look again at the use of the word 'retrospective', which does not appear to apply to qual data and may not apply to quant data either.</p> <p>Once language is established to describe the design, use consistently through the paper.</p> <p>2 Informed consent</p> <p>You report ethics approval but the detail on how people were consented and enrolled is very thin.</p> <p>If you collected primary quant data, much more detail is required on how patients were consented.</p> <p>If only qual data were collected by you, a declaration on informed consent is still warranted. What measures if any were taken to 'enrol' qual respondents, or did you just email them and see if they responded? It looks like you ended up with 100% participation ("In total, 86 unique PEA cases were discussed"). This is very impressive but it's important to be clear that this was done in an appropriate way and participants weren't hassled, pressured, etc.</p> <p>3 Miscellanea</p> <p>-The word 'hospital' does not appear in the title, which seems odd. Following on from comment 1, a better title might be</p> <p>Preventable emergency admissions of older adults: A mixed-methods study of rates, associative factors and underlying causes in two Dutch hospitals</p> <p>-The biggest limitation is that this is an observational study. The quantitative analyses reflect those variables that you have but there is a chance of omitted variable bias, where some unknown factor is correlated with your predictors, causes your outcome and changing the parameters of correlated observed predictors. I don't necessarily think this is a huge concern but it does merit a clear and definitive declaration early in your limitations section.</p>
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	<p>-A smaller limitation, data were collected in July and November. Hospital admissions are much higher Jan-Mar so total admissions (and avoidable admissions?) may be underestimated in your study.</p> <p>-You use the word criterium at various points; you mean criterion.</p>
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REVIEWER	Professor Sir Denis Pereira Gray University of Exeter, UK
REVIEW RETURNED	25-Jul-2020

GENERAL COMMENTS	<p>Editor BMJ Open</p> <p>15 July 2020</p> <p>Dear Editor BMJ Open 2020-040431 Preventable emergency admissions of older adults: a retrospective study of associated factors and underlying causes Thank you for inviting me to assess this article, which am pleased to do so.</p> <p>I do know Nijmegen and have had the privilege of having been an external assessor for two medical doctoral theses at the University there. However, I have no financial or professional interest with any of the authors and I believe I have no conflict of interest in undertaking this assessment. I declare an interest in the topic and have had research on emergency admissions to hospital in England published in BMJ Open in 2017.</p> <p>STRENGTHS This article has several strengths. The topic of potentially avoidable admissions to hospital from emergency departments is important and the article is strong in clarifying the many reasons which include the risk of patients acquiring health hazards such as infections, loss of cognitive and physical functioning and considerable costs to the health system. Furthermore, they rightly state this is a common problem so it is logical to research it. The authors have identified a reasonable number of patients for their study. Their condition that all should be aged 70 or over is reasonable as it is admissions for the elderly which are most common. The authors have noted whether the patient arrival was in office hours or out of hours, which is logical in the light of previous literature. Similarly single status was rightly recorded.</p> <p>LIMITATIONS There are substantial limitations. Lack of information The information available is limited and often does not reflect findings in recent literature. Patients in western Europe may attend emergency departments on their own volition or after being referred by their general practitioners. In the UK 7% of patients come after GP referral. The comments on care in the community mean it would be better if these two groups of patients had been identified. There is an extensive literature that the use of hospital services is substantially influenced by the patients' socio-economic circumstances (social class). It is stated that the socio-economic</p>
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	<p>categories of the patients were determined, but I was not able to find the results or any comment in discussion section.</p> <p>There is an extensive international literature that continuity of care with primary care physicians (general practitioners/family physicians) is significantly associated with lower use of emergency departments (Kohnke et al., 2017; Ride et al., 2019). The authors include only one reference on continuity (no 4), but continuity not mentioned as a factor and this source is grouped with other topics. The reference selected is not a good summary and is dated 2013 when there are multiple later research studies on continuity and hospital admissions eg (Barker et al., 2017). No mention is made of this literature and readers cannot relate the findings in this article to many other studies.</p> <p>The word “moral” is used several times but its significance is not clear and it needs to be clarified precisely.</p> <p>Age of the patients</p> <p>The age of the patients was properly recorded and is summarised in the tables. However the age range is not given nor is the information about attendances of the very old. However, there are reports of increasing attendances in emergency departments by patients aged 90 or over who often have multi-morbidity and who may be difficult for residents to assess.</p> <p>Research I have been involved with (Pereira Gray et al., 2017, declare an interest) shows how sharply age influences emergency hospital admissions and that in patients over aged 45, age outweighs social factors and that the J-shaped curves are strikingly similar in all groups of social deprivation.</p> <p>Patients’ perspective</p> <p>These patients were adults with mental capacity. The study would have been stronger if they had been consulted, especially the group which the hospital doctors considered had been admitted inappropriately. What did those patients think? Did they perceive any benefit? If so what?</p> <p>GPs’ perspective</p> <p>General practitioners in the Netherlands have relatively good continuity of care and many perhaps most would have known the patient well and probably would have been able to contribute a view on why their patents went to the emergency department. Many such attendances are because of fear (sometimes unvoiced) and the GPs would be the best placed to understand this. The study would have been stronger if this perspective had been included</p> <p>There have been reports of the views of patients and GPs (Campbell, 2001), but this is not cited.</p> <p>Polypharmacy</p> <p>This is clearly defined and is well recognised as a clinical problem and the findings are summarised, but there is no comment even though inappropriate prescribing and hospital admissions has been studied (Dalleur et al., 2012) but not cited.</p> <p>Hospital orientation</p> <p>As this is study of patients in hospital and conducted by hospital doctors, a basic hospital orientation is to be expected but the writing is over focused on hospital perspectives at the expense of community perspectives.</p> <p>The authors assume that hospital doctors can always decide accurately if an admission to hospital is necessary or not. But factors in the home, family or local environment as well as the patient’s personality and previous experience are often important and sometimes particularly so, but these factors have been excluded.</p>
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	<p>Patient delay in seeking advice is a topic of importance and is described but this study was not organised to enable understanding of this to elucidated.</p> <p>The study would have been much stronger if an experienced family physician had been part of the evaluative process.</p> <p>The design and conduct of the study is hospital orientated and pays too little attention to factors involving the patients in the community. There is a statement that: “emergency departments are the most common entry point to the health system.” This is incorrect. For example, in the UK there are about 23 million consultations annually in hospital emergency departments and about 300 million in general practices.</p> <p>Literature review This is limited.</p> <p>Analysis There have been other studies of presumed inappropriate admissions to hospital over 25 years (Bare et al., 1995). One finding was that the proportion of patients admitted inappropriately was higher at weekends but make no comment on this in the discussion section. It might be attributable to the availability of general practice during week days.</p> <p>The kappa statistic is used correctly for inter-rater agreements but a result of 0.5 is only moderate.</p> <p>Residents It is stated that the admitting decisions are taken by residents who had an average of five years clinical experience. It is also stated that a geriatrician was available 24 hours but was rarely consulted. This merits discussion especially as there are experiments in Europe in which geriatricians participate in admission decisions.</p> <p>RECOMMENDATION Whilst this is an important topic, the article is limited. I recommend that it is currently not of the standard for publication in BMJ Open. I advise that the authors should be given an chance to revise their manuscript to strengthen and deepen their analysis and discussion and to review their statement of limitations.</p> <p>Professor Sir Denis Pereira Gray OBE HonDSC FRCP FRCGP FMedSci Emeritus Professor, University of Exeter, UK</p> <p>References Barker, I., Steventon, A. and Deeny, S.R. (2017) Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data. <i>BMJ</i>, 356, :j84.</p> <p>Baré, M.L., Prat, A., Lledo, L., Asenjo, M.A. and Salleras, L.L. (1995) Appropriateness of admissions and hospitalization days in an acute-care teaching hospital. <i>Revue d'épidémiologie et de santé publique</i>, 43(4), :328.</p> <p>Campbell, J. (2001) Inappropriate admissions: thoughts of patients and referring doctors. <i>Journal of the Royal Society of Medicine</i>, 94(12), :628-631.</p> <p>Dalleur, O., Spinewine, A., Henrard, S., Losseau, C., Speybroeck, N. and Boland, B. (2012) Inappropriate prescribing and related hospital admissions in frail older persons according to the STOPP and START criteria. <i>Drugs & Aging</i>, 29(10) :829-837.</p> <p>Kohnke H Zielinski A (2017) Association between continuity of care in Swedish Primary Care and emergency services utilisation: a population -based cross sectional study <i>Scand J Prim Health Care</i> 35 (2) :113-9</p>
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	<p>Pereira Gray, D., Henley, W., Chenore, T., Sidaway-Lee, K. and Evans, P., (2017) What is the relationship between age and deprivation in influencing emergency hospital admissions? A model using data from a defined, comprehensive, all-age cohort in East Devon, UK. <i>BMJ open</i>, 7(2) :e014045.</p> <p>Ride J Kasteridis P Gutacher N et al incl Kendrick T (2019) Impact of continuity of family practice care in unplanned ED use and hospital admissions for patients with serious mental illness. <i>Health Serv Res</i> 2019; 54 :1316-25</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer #1		
<p>Recommend a little more clarity on the exact design. The title and abstract say, retrospective mixedmethods study. I take this to mean that after the study period you went back to routinely collected data, identified eligible admissions, extracted their individual-level data (for quant data) and approached their attending physicians (for qual data). But in the text itself the word 'retrospective' appears only once, in the introduction, and then in relation to other studies. When it comes to your own study (Methods>Design), you use the phrase "comparative cohort study" and talk of the data being "collected". Normally it's clearest to describe primary data as being collected, secondary data as being accessed or extracted. I am not sure that this is a comparative cohort study; you have one cohort (people admitted to hospital via the ED aged 70+). It's not clear in 'Study sample and sampling' if you are picking the quant variables from a list of routinely collected data or if you specified these data fields and collected them yourselves. When I look at Table 1, many variables I expect to be collected routinely but some perhaps not (e.g. informal care at home) or perhaps only via data linkage (e.g. polypharmacy). When you introduce the qual data collection ('Identification of physicians' perceived causes for PEAs') you are approaching the doctors 1-3 days after admission. So you are identifying them prospectively through EMRs and clinical notes, and in a lot of cases the patients haven't even been discharged. This is not a</p>	<p>We thank the reviewer for this comment as the design indeed deserves more clarification.</p> <p>The reviewer's description of our data collection process is partly correct. We extracted/collected quantitative and qualitative data during (and not after the study). First, eligible admissions were identified by researchers throughout the study period. For each eligible admission, quantitative data were retrospectively extracted (and thus not collected) from the electronic medical record (EMR). Most of the data were routinely extracted from the EMR as they are registered in a standardized manner (i.e., age, gender, urgency classification, time of ED arrival, polypharmacy, ED LOS, number of specialties involved in the ED and clinical information to calculate the CCI). Quantitative data on presence of informal care at home and marital status were also retrospectively extracted from the EMR by manually searching for relevant information in the medical history and notes from doctors or nurses.</p> <p>The reviewer is right by saying that the qualitative data (i.e., physician's perceived causes for PEA's) were</p>	<p>Title line 1;</p> <p>Abstract lines 54-59;</p> <p>Methods line 144-147 and 154-157</p>

<p>retrospective design. Please clarify in your title, abstract and methods, where do quant data come from, when were they accessed, did you have to link to more than one database? Look again at the use of the word 'retrospective', which does not appear to apply to qual data and may not apply to quant data either. Once language is established to describe the design, use consistently through the paper.</p>	<p>collected prospectively (as they were approached 1-3 days after admission after scanning on eligibility).</p> <p>We also agree that the phrase 'comparative cohort study' does not properly reflect our design. We changed this to 'observational cohort study'.</p> <p>We made edits to clarify the abovementioned points and to describe our design throughout the manuscript in a consist manner.</p>	
<p>You report ethics approval but the detail on how people were consented and enrolled is very thin. If you collected primary quant data, much more detail is required on how patients were consented. If only qual data were collected by you, a declaration on informed consent is still warranted. What measures if any were taken to 'enrol' qual respondents, or did you just email them and see if they responded? It looks like you ended up with 100% participation ("In total, 86 unique PEA cases were discussed"). This is very impressive but it's important to be clear that this was done in an appropriate way and participants weren't hassled, pressured, etc.</p>	<p>We did not collect a formal informed consent from each eligible patient, because this was not reasonably manageable for us. We were unable to approach and inform each candidate in both (often hectic) ED sites on a 24/7 basis. We tried to meet up to ethical research standards by the following steps: 1) In general, the policy in our hospitals is as follows: patients at both study sites have the possibility to declare that they are unwilling to participate in scientific research. Those unwilling to participate (expressed by a note in their medical chart) were excluded from the study; 2) patient data were extracted by researchers with a clinical background (and employed by the hospital) who immediately anonymized data when entering the data in the study database. Qualitative data for the specific PEA cases was collected by using their hospital ID number as a reference for physicians; 4) physicians were approached by e-mail (using their professional e-mail address) and asked for consent before participating in the qualitative study.</p>	<p>Methods section p.5 line 142-147</p>

	We explained our methods and data collection to our local ethics commission and they approved our study.	
The word 'hospital' does not appear in the title, which seems odd. Following on from comment 1, a better title might be Preventable emergency admissions of older adults: A mixed-methods study of rates, associative factors and underlying causes in two Dutch hospitals	We thank the reviewer for this observation and changed the title to "Preventable emergency admissions of older adults: A mixed-methods observational study of rates, associative factors and underlying causes in two Dutch hospitals".	Title line 1-2
The biggest limitation is that this is an observational study. The quantitative analyses reflect those variables that you have but there is a chance of omitted variable bias, where some unknown factor is correlated with your predictors, causes your outcome and changing the parameters of correlated observed predictors. I don't necessarily think this is a huge concern but it does merit a clear and definitive declaration early in your limitations section.	We thank the reviewer for noticing this limitation. We agree with the reviewer that this is an important limitation and made edits accordingly.	Strengths and Limitations line 81-82 Discussion p.10 line 369-374
A smaller limitation, data were collected in July and November. Hospital admissions are much higher Jan-Mar so total admissions (and avoidable admissions?) may be underestimated in your study	Thank you for noticing this limitation. We agree that this could underestimate the total (and maybe preventable) admissions and made edits accordingly.	Discussion p.10 line 374-376
You use the word criterium at various points; you mean criterion.	We changed this word throughout the paper.	Methods p6. Line 185 and 186 Results p.7 line 215, 216 and 229 Table 2 line 445 Supplements line 461
Reviewer #2		
The topic of potentially avoidable admissions to hospital from emergency departments is important and the article is strong in clarifying the many	We thank the reviewer for this comment.	

<p>reasons which include the risk of patients acquiring health hazards such as infections, loss of cognitive and physical functioning and considerable costs to the health system.</p> <p>Furthermore, they rightly state this is a common problem so it is logical to research it.</p>		
<p>The authors have identified a reasonable number of patients for their study. Their condition that all should be aged 70 or over is reasonable as it is admissions for the elderly which are most common.</p>	<p>We thank the reviewer for this comment.</p>	
<p>The authors have noted whether the patient arrival was in office hours or out of hours, which is logical in the light of previous literature.</p> <p>Similarly single status was rightly recorded.</p>	-	
<p>The information available is limited and often does not reflect findings in recent literature. Patients in western Europe may attend emergency departments on their own volition or after being referred by their general practitioners. In the UK 7% of patients come after GP referral. The comments on care in the community mean it would be better if these two groups of patients had been identified.</p>	<p>We agree. We also collected the data on referral type. Therefore, we included ED referral (dichotomized into: by patient self (on their own volition) versus by physician or ambulance) as a descriptor for our sample and as a variable in the regression analysis (see table 1 and 3). Our analysis showed that type of referral (by patient self vs by physician or ambulance) was not an associative factor for PEA.</p>	<p>Abstract line 57</p> <p>Methods p.5 line 149-150</p> <p>Table 1 and 3</p>
<p>There is an extensive literature that the use of hospital services is substantially influenced by the patients' socio-economic circumstances (social class). It is stated that the socio-economic categories of the patients were determined, but I was not able to find the results or any comment in discussion section.</p>	<p>Indeed, we did not determine socio-economic categories. However, did categorize patients on demographic characteristics (e.g., age, gender, marital status). Therefore, we decided to change the term 'socio-demographic' (which might suggest we looked into aspect like social class) into a more general term 'demographic' (covering aspects like age, gender, etc.)</p>	<p>Methods p.5 line 146</p> <p>Discussion p.10 line 337</p>
<p>There is an extensive international literature that continuity of care with primary care physicians (general practitioners/family physicians) is significantly associated with lower use of emergency departments (Kohnke et al., 2017; Ride et al., 2019). The authors include only one reference on</p>	<p>We agree with the reviewer on this statement. Continuity of care with primary care physicians is an important factor for ED attendance and could therefore be a possible explanation on why ED attendance</p>	<p>Discussion p. 10 Line 344-345</p>

<p>continuity (no 4), but continuity not mentioned as a factor and this source is grouped with other topics. The reference selected is not a good summary and is dated 2013 when there are multiple later research studies on continuity and hospital admissions eg (Barker et al., 2017). No mention is made of this literature and readers cannot relate the findings in this article to many other studies.</p>	<p>in the weekend is a risk factor for PEAs.</p> <p>We made edits regarding the literature and added the impact of (lack of) continuity of care in the discussion section.</p>	
<p>The word “moral” is used several times but its significance is not clear and it needs to be clarified precisely.</p>	<p>Thank you for noticing this. We clarified what we mean with moral grounds.</p>	<p>Result p. 8 Line 247</p>
<p>Age of the patients The age of the patients was properly recorded and is summarised in the tables. However the age range is not given nor is the information about attendances of the very old. However, there are reports of increasing attendances in emergency departments by patients aged 90 or over who often have multi-morbidity and who may be difficult for residents to assess. Research I have been involved with (Pereira Gray et al., 2017, declare an interest) shows how sharply age influences emergency hospital admissions and that in patients over aged 45, age outweighs social factors and that the J-shaped curves are strikingly similar in all groups of social deprivation.</p>	<p>We agree with the reviewer that age is an important factor. In fact, we found age as an important associative factor for PEA and we refer to this in the discussion (see lines 350-354). Like the reviewer, we assume that people with a higher age - and thereby an increased chance of comorbidities and atypical symptoms - are more difficult for physicians (especially residents) to assess.</p> <p>The study mentioned (Pereira Gray et al. 2017) is a valuable addition to the discussion in light of the abovementioned. Please see our edits.</p>	<p>Discussion p. 10 Line 340-344</p>
<p>Patiënts' perspective These patients were adults with mental capacity. The study would have been stronger if they had been consulted, especially the group which the hospital doctors considered had been admitted inappropriately. What did those patients think? Did they perceive any benefit? If so what?</p>	<p>We agree with the reviewer that including patient insights would have strengthened our findings. Via patients (and caregivers) we could have learn much more about the added value or adverse consequences of the admissions apart from whether or not it was preventable from a clinical perspective. We therefore made edits in the discussion and added the importance for future research to include these perspectives.</p>	<p>Strengths and limitations p.3 Line 83-84</p> <p>Discussion p. 11 Line 391-397</p>
<p>GP Perspective General practitioners in the Netherlands have relatively good continuity of care</p>	<p>We agree with the reviewer that the perspective of community health professionals such as the GP could have strengthened our study. We</p>	<p>Strengths and limitations p.3 Line 83-84</p>

<p>and many perhaps most would have known the patient well and probably would have been able to contribute a view on why their patients went to the emergency department. Many such attendances are because of fear (sometimes unvoiced) and the GPs would be the best placed to understand this. The study would have been stronger if this perspective had been included There have been reports of the views of patients and GPs (Campbell, 2001), but this is not cited.</p>	<p>made edits accordingly (see also our previous reaction)</p>	<p>Discussion p. 11 Line 391-397</p>
<p>Polypharmacy This is clearly defined and is well recognised as a clinical problem and the findings are summarised, but there is no comment even though inappropriate prescribing and hospital admissions has been studied (Dalleur et al., 2012) but not cited.</p>	<p>Although inappropriate prescribing may be an important determinant for hospital admissions, we did not focus on this variable. Our focus was on studying factors for preventable admissions, and we did not consider this as an important variable. Based on previous publications and our own professional experiences at the ED, we assumed that polypharmacy could be an important factor determining the professional's decision to admit a patient. However, polypharmacy was not an associative factor for PEA based on our analysis.</p>	
<p>The authors assume that hospital doctors can always decide accurately if an admission to hospital is necessary or not. But factors in the home, family or local environment as well as the patient's personality and previous experience are often important and sometimes particularly so, but these factors have been excluded.</p>	<p>In our study we tried to find objective factors that are correlated with avoidable admission in older adults. We agree with the reviewer that there are more patient related factors, such as factors in the family or local environment, and recognize this as a limitation of our study (see lines 369-374). We tried to investigate these factors in our qualitative section, in which we tried to extract the reason for admission (via the admitting doctor) if there was no hard medical reason for this admission.</p> <p>We believe that in this way we have been exploring other factors, not obtainable via quantitative research.</p> <p>As stated above we agree our study could have been stronger by including patient opinions on their</p>	

	admission, although it is reasonable to think patients or their family can not decide if an admission is medically necessary or not.	
Patient delay in seeking advice is a topic of importance and is described but this study was not organised to enable understanding of this to be elucidated. The study would have been much stronger if an experienced family physician had been part of the evaluative process. The design and conduct of the study is hospital orientated and pays too little attention to factors involving the patients in the community. There is a statement that: "emergency departments are the most common entry point to the health system." This is incorrect. For example, in the UK there are about 23 million consultations annually in hospital emergency departments and about 300 million in general practices.	We agree with the reviewer. See our previous comments and edits (especially regarding study limitations). We agree that this study has a strong focus on investigating PEAs from the hospital perspective. Therefore, we made added methodological suggestions for future studies investigating PEAs.	Discussion p.11 Line 391-397
There have been other studies of presumed inappropriate admissions to hospital over 25 years (Bare et al., 1995). One finding was that the proportion of patients admitted inappropriately was higher at weekends but make no comment on this in the discussion section. It might be attributable to the availability of general practice during week days.	We included Bare et al. as a reference to our discussion. We also added lack of continuity of care (e.g., not having his/her own familiar GP available in the weekend) as an explanation of preventable admissions in our discussion section.	Discussion p.10 line 344-346
The kappa statistic is used correctly for inter-rater agreements but a result of 0.5 is only moderate.	We agree with reviewer and already mentioned these moderate scores (and its implications) in the limitation section of our discussion (line 389-392)	
It is stated that the admitting decisions are taken by residents who had an average of five years clinical experience. It is also stated that a geriatrician was available 24 hours but was rarely consulted. This merits discussion especially as there are experiments in Europe in which geriatricians participate in admission decisions.	We think this a great suggestion of the reviewer. In one of the hospitals the geriatrician was available 24 hours. In this hospital there is a protocol on when to consult the geriatrician but it is not often used in the admission process. We think that our findings could strengthen the need to consult the geriatrician in the admission process and even could reduce the amount of inappropriate admissions for older adults. This should be one of the	Discussion p.11 line 407-408

	future improvements and we added this in our discussion.	
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VERSION 2 – REVIEW

REVIEWER	Peter May Trinity College Dublin, Ireland
REVIEW RETURNED	05-Oct-2020

GENERAL COMMENTS	Thank you for this resubmission. I consider my earlier comments to have been addressed and have no further queries. The paper would benefit from thorough editorial review from a native English speaker.
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REVIEWER	Professor Sir Denis Pereira Gray Emeritus Professor, University of Exeter, UK
REVIEW RETURNED	06-Oct-2020

GENERAL COMMENTS	<p>BMJ Open Review. 28 Sept.2020 Van den Brock et al Potentially avoidable admissions BMJ Open 2020 -040431.R1</p> <p>Thank you for inviting me to review this article which I am pleased to do. Thank you also for sending a word file which was much easier to work with</p> <p>It has been improved after the suggestions I made previously. In particular, the authors now recognise the limitations of relying exclusively on the clinical judgements of resident junior hospital doctors who do not know the patients as people, do not know the home conditions, or the previous care offered and received or declined.</p> <p>They now state that the view of community doctors would be helpful but omit the words general practitioners.</p> <p>The strengths of the text remain and the findings are topical and important.</p> <p>Remaining difficulties</p> <p>The use of the word "moral" in relation to decision taking is a problem. This may be a cultural or a translational problem but it still raises a question about what exactly this means.</p> <p>The lack of any involvement by patients is a weakness, especially as the authors dichotomise admissions as patient led or doctor/ambulance led. In the UK many ambulance admissions are initiated by patients themselves. I don't know if this is also true in the Netherlands but if it is it weakens the logic of their classification. Since this cannot now be rectified the best that can be done is to add lack of patient involvement to the section on limitations.</p> <p>Use of English</p> <p>In line 1106 "insight lacks" is not correct English. Better would be it is not known</p> <p>RECOMMENDATION Publish with final amendments.</p> <p>Denis Pereira Gray Professor Sir Denis Pereira Gray OBE Hon DSc FRCP FRCGP FMedSci Emeritus Professor, University of Exeter, UK</p>
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