Author's response to reviews

Title: Out-of-hours demand for GP care and emergency services: patients choices and referrals by general practitioners and ambulance services

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Author's response to reviews: see over
Dear Dr. Chrissie Kouremenou,

Thank you for sending us the comments by the three reviewers. Based on their suggestions and critical remarks we have revised the article into its current version.

In this accompanying reply, we will try to address all critical comments with reference to the changes in the text where appropriate. Please note that the percentages and numbers in Table 4 are slightly altered due to changes in the syntax (using 'valid numbers'). Compared to our previous submission, however, the key messages have remained unchanged.

We thank all reviewers for their supportive reactions and useful remarks.

We look forward to receiving your reply.

On behalf of my co-authors,

Yours sincerely,

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29 April 2007
Reviewer: David Dunt

General
This article I believe makes a valuable contribution to better understanding the place of the family doctors (GPs) and hospital emergency departments in the delivery of After hours care. It is unusual to have two datasets with comparable coding schemes) such as these one covering a GP cooperative providing all (it would seem) of GP care and the three hospital emergency departments all of the ED care for a defined population. Its conclusions (subject to point 3 below) are likely to be broadly correct. I have only one relatively minor point, one important question and one major reservation.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. My main point concerns the fact that the analysis is restricted to bivariate. The two matching datasets and coding schemes cry out for multivariate analysis following the merging the two datasets. It is very likely to provide further insight and modification of the study findings, being based as they currently are on crude analysis.

We agree that the analysis is restricted to a bivariate one. It reflects that our primary objective was to provide data on the out-of-hours pattern of demand for GP and A&E services, as well as a broad comparison of the three patient groups contacting the Accident & Emergency Department: self-referrals, GP-referrals and referrals by the ambulance service. This type of analysis yields a first basis for the description of the central role and position of the GP in out-of-hours care, the limited proportion of AED self-referrals within the total demand and the filtering effect of GP and ambulance services compared to this group.

A further step would indeed be to perform a multivariate analysis following the merging of the two datasets. However, we already used the results of such an analysis for another paper that is being revised elsewhere at this moment, making us feel somewhat reluctant to insert them in the current one. We hope that you can agree with this approach or else that you may have some suggestions to further tackle this issue.

2. Presumably the three hospital emergency departments bordering the region provide care to patients attending from outside the region. Does the dataset include such these patients? If not this is an important point that needs to be stated in the study along with the appropriate caveats for the study’s conclusions that their existence in the ED population dataset requires.

Indeed this is an important issue that we have tried to pay more attention to, by adding the following text to the discussion (p10; lines 16-21):
(…)‘Furthermore, the proportion of self-referrals within the group of all patients who visited the three AEDs combined was derived from the contacts of the population of Velsen only. It is therefore unknown whether this is also representative for the other populations that these AEDs are serving. Hence, the conclusion that further integration between the GP cooperative and AED may not be effective refers to the population of Velsen only.’

A more complicated issue that lies behind this statement is, that GP cooperatives and AEDs serve populations that may differ in size and geographical orientation, making it even harder to determine how integration of these services may eventually become more comprehensive or (cost-)effective. If desired, we would be prepared to add an extra sentence on this issue; otherwise, we would propose to limit the revision to the current text.
N.B. In the methods paragraph we tried to further clarify the precise data collection in the AEDs with the sentence (p5, lines 31-33):
‘For the same periods of time and population, a similar, retrospective data collection and coding took place using the hospital records for all patients from the population of Velsen who contacted one of the three AEDs bordering on the area.’

**Minor Essential Revisions** (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct).
There are some small differences (3%) in the over 65 population between the town of Velsen and the Netherlands that could nevertheless be important in the delivery of AH care.

In the discussion we changed the text into (p10, lines 13-16):
(…) ‘Although the population studied appeared similar to that of the Netherlands in terms of age-sex structure (Supplementary Table), people from the respective age-groups for 15-44 and ≥65 years may have been slightly under- and overrepresented, leading to differences in overall demand from these groups.’
Reviewer: Chris Salisbury

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
None

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Thank you for asking me to review this paper. Generally it appears to have been well conducted and well written. The topic it studies is not completely original but it provides useful updated information compared with previous studies and will be particularly interesting to readers in the Netherlands.

Method: With regard to the methods it is not clear whether the data they collected from A&E departments were restricted to people who lived in the city of IJmuiden or whether it included anybody who attended the A&E department. In the latter case how did they know the population using these departments, which they would need in order to calculate rates per thousand population?

As we pointed out in our reply to David Dunt too, we should have addressed this issue in both the methods and discussion and we have revised the text in both paragraphs:

Methods (p5, lines 31-33):
‘For the same periods of time and population, a similar, retrospective data collection and coding took place using the hospital records for all patients from the population of Velsen who contacted one of the three AEDs bordering on the area.’

Discussion (p10; lines 16-21):
‘Furthermore, the proportion of self-referrals within the group of all patients who visited the three AEDs combined was derived from the contacts of the population of Velsen only. It is therefore unknown whether this is also representative for the other populations that these AEDs are serving. Hence, the conclusion that further integration between the GP cooperative and AED may not be effective refers to the population of Velsen only.’

A more complicated issue that lies behind this statement is, that GP cooperatives and AEDs serve populations that may differ in size and geographical orientation, making it even harder to determine how integration of these services may eventually become more comprehensive or (cost-)effective. If desired, we would be prepared to add an extra sentence on this issue; otherwise, we would propose to limit the revision to the current text.

Results: I could not understand the second paragraph of the results and make it tie up with Table 1 until I eventually worked out that Table 1 shows percentages to all out-of-hours contacts whereas the text refers to percentages of people who contacted the GP cooperative or the AED. This could be clarified if the second paragraph began “of those patients who contacted the GP cooperative in both periods combined (11375), 4741 patients (41.7%)”.... and so on.

In the fourth paragraph of the results the authors talk about the call rates to the GP cooperative for children under five being three times greater than the rate at AED. I think this is incorrect, since the rate of people attending the GP coop is about eight times higher for all ages combined. I think what they mean is that children under five years accounted for more than three times the proportion of consultations at the cooperative compared with the AED, while young adults accounted for a high proportion of those attending the AED.
We found these comments very helpful and gladly inserted the textual suggestions into the following paragraphs (p7, line 11 onwards):

‘Of those patients who contacted the GP cooperative in both periods combined (n=11,375), 4741 (41.7%) received a telephone advice, 5408 (47.5%) a centre consultation, and 1222 (10.7%) a home visit.’ (…)

‘Of those patients who contacted the AED in both periods combined (n=1584), self-referrals represented a substantial number of contacts (42.7%; 677/1584), however, within the total out-of-hours demand, they represented 5.2% (677/12959) of all contacts only.’ (…)

‘Children under five years accounted for more than three times the proportion of consultations at the GP cooperative compared with the AED, while young adults accounted for a high proportion of those attending the AED.’

The authors discuss differences in the diagnoses of people consulting in each site. However the data were collected in different ways so there may well have been coding differences. I think this is an important limitation which should be mentioned.

We added the following text to the discussion paragraph (p10, lines 28-33):

‘The coding of presenting symptoms to the AED took place using hospital records rather than the data collection sheets that were used in the GP cooperative. Even though the same coding methods were used for both settings, it is not clear whether the order in which the complaints were written down were similar to the order in which they were mentioned. Furthermore, it is uncertain whether the ICPC is valid for problems presented at the AED. Therefore, coding differences between both setting may have occurred.’

Half way down page seven the authors say that “compared to the GP co-operatives, more male patients were seen in the AEDs”. This is the same point as I have made above. They mean a higher proportion of patients attending the AED were male.

We inserted (p8, line 19):

‘Compared to the GP cooperative, a higher proportion of male patients was seen in the AEDs (p<0.001).’

The discussion is reasonable and the references appear appropriate, as are the tables.

Discretionary Revisions (which the author can choose to ignore)
It might be helpful if the authors added rates of calls per 1000 patients in different age groups as a final column in Table 2.

A useful suggestion that we have followed (see page 18).
Reviewer: Caro van Uden

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
None

General
This is an interesting paper that contributes to the knowledge on demand for out-of-hours care.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Methods:
1) Please explain already in the methods section why you chose to collect data in two periods (with an interval of five years).

We followed this suggestion by adding the following text to the methods paragraph (p5, lines 20-23):
'The data-collection was repeated after a somewhat arbitrary period of five years, because GPs were concerned that once the cooperative had become more widely known to the public, increasing numbers of patients would make use of its service.'

2) In the first sentence of the setting paragraph you mention the city of IJmuiden. In the supplementary table you mention the city of Velsen. Please correct this. Also mention that this is a city in the Netherlands, for not all readers may know these places.

In the section on setting, we revised the text as follows (p5, lines 3-4):
'The GP cooperative in the coastal city of IJmuiden, the Netherlands, took part in the study. Within a well defined area (municipality of Velsen) it serves a population of around 62,000 people with a total of 25 GPs and eight nurses.' (and everywhere else where appropriate).

3) Setting paragraph, line 9: correct: “one nurse who receives, assesses, and manages all….”. Line 10: replace ‘standards’ for ‘guidelines’ Line 11: replace ‘was’ by ‘are’.

Corrected (p5, lines 12-13; we used ‘were’ instead of ‘are’).

Results
1) Page 7, Para 2: How did you retrieve information on (and identify) referred patients that went to other hospitals? Please mention this in the Methods section.

We added:
'If these patients had not shown up at one of the AEDs studied, after approximately six months, their electronic medical records were checked for AED reports to locate any other hospitals that were visited after the out-of-hours GP referral.'

A limitation here is of course, that patients who did visit the AED elsewhere but for whom no letter was sent (or brought) to the GP surgery, would have been falsely counted as patients who never went at all. However, since we also checked the electronic medical records (up to 6 months) for any references to an AED visit elsewhere, we believe their numbers to be small.
Discussion

1) Page 10, Para 3: motives to integrate services not only depend on demand for out-of-hours care. Other factors such as efficiency, may also play a role.

We agree with this point and believe to have addressed other motives for integration in the paragraphs following the one mentioned.

2) Page 11, last sentence: please delete this sentence, because this conclusion does not follow from the results of the study.

We have deleted this sentence from the original text.