Original Article

USE OF OUT-OF-HOURS SERVICES: THE PATIENT'S POINT OF VIEW ON CO-PAYMENT A MIXED METHODS APPROACH

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ABSTRACT

Introduction: In many countries out of hours (OOH) care is offered by different health care services. General practitioners (GP) tend to offer services in competition with emergency departments (ED). Patients behaviour depends on a number of factors. In this study, we highlight the knowledge and ideas of patients concerning the co-payment system.

Methods: We used a mixed methods design, combining quantitative and qualitative research. During two weekends in January 2005, all patients using the ED or the GP OOH service, were invited for an interview with a structured questionnaire. A stratified random sample of patients participated in a semi-structured interview. Both methods add complementary data to answer the research questions.

Results: Most mentioned reasons for seeking help at the ED are: accessibility (15.0%), proximity (6.4%) and competence of the staff (5.6%). Reasons for choosing the GP are: GP is easy to find, minor medical problem or anxiety and confidence in the GP. The odds of not knowing the co-payment system are significantly higher in patients visiting the ED (OR 1.783; 95% CI: 1.493-2.129). Mostly GP users recognize the problem of ED overuse. They suggested especially to provide clear information about the tasks of the different services and about the payment system, to reduce ED overuse.

Conclusion and discussion: When intending to shift from ED to GP services for minor medical problems, aiming at just one measure is no option. Information campaigns aiming to address the entire population, can clarify the role of each player in out-of-hours care.

Key words: After-hours care, Primary Care, Co-payment, Health services, Choice behavior

INTRODUCTION

Out of hours care is essential in a modern health system. In fact, in a week, more than half of the time spent is not covered by regular services. Out of hours care aids the quality of health care by assuring continuity of care.

In many countries, out of hours care is offered by primary, secondary and even tertiary services. General practitioners (GPs) tend to offer services in slight competition with secondary and tertiary services in emergency departments (ED) (1).

In most European countries the use of ED for minor medical problems leads to an overuse of these services. The risk of inefficient use of personnel and overcrowding is of concern. It might threaten timely treatment of serious medical conditions at the ED (2, 3). Inefficient use of resources complements this picture (4, 5).

Since the 1990s, policy makers and physicians have tried to redirect patient flows of minor medical problems to primary care (6-8). Making primary health care more accessible during out-of-hours by implementing general practitioner cooperatives (GPC) is one of the measures that may show effective over time (9). However, the presence of a new service in primary care may not alleviate the demand in secondary care (10). This can be explained by the fact that the presence of any (new) service probably also creates the need for it (11, 12). Supply seems to induce demand. Moreover, in countries like Belgium with free access to primary, secondary and tertiary care, the allocation of a 'gatekeepers' role' to primary care physicians might be an option. This measure already has proven to be effective in the Netherlands for example (13).

Patient behaviour depends on a number of factors: previous experience with a service, communication skills of attending physicians, waiting times and accessibility of a service (1, 14, 15). Imposing financial incentives on patients can be used to redirect patient fluxes (16). The aim is to promote more efficient use of out-of-hours services. Different possibilities of 'direct cost-sharing' exist: co-payment (the user pays a fixed fee per item or service), co-insurance (the user pays a fixed portion of the total cost, the insurer pays the remaining proportion) and deductible (the user pays a fixed quantity of the costs, the insurer pays the remainder). In the discussion of implementing cost-sharing, different aspects have to be considered: efficiency aspects, potential health effects and equity effects (17).

When consumers of care are held responsible, the question arises as to whether they are able to asses or estimate the degree of urgency of their medical problem and choose the appropriate care (18, 19)? Inappropriate patient delay in seeking medical care for serious conditions, because financial implications are unclear to them, can be introduced. Especially deprived patient groups can be disadvantaged (16, 20, 21). The rationale for cost sharing is often based on the moral hazard argument, which states that individuals may overuse care if they do not share in its costs (22). On the other side of the spectrum, the risk of overuse exists for the wealthy (8, 23, 24).

This study was performed to clarify the role of co-payment in the decision process of patients. We focused on the following questions: 1) Are patients aware of co-payment systems? 2) Do they consider co-payment a useful tool to diminish inappropriate use of services? 3) Which measures do patients suggest that could work to diminish overuse of ED for minor medical problems? This way, we highlight the knowledge and ideas of patients concerning the co-payment system at the ED and in relation to other factors.

CONTEXT

This study was performed in an open access health care system, with pay for service. People have free access to both general practice and to the emergency department. In contrast to the ED, during weekends and public holidays, out of hours care is arranged by regional groups of general practitioners.

Any service can be attended without previous contact by telephone or referral.

People have access to the ED without a referral. They can also be referred by the GP on call or another physician and can also be brought in by ambulance or other emergency medical services (25).

When consulting the GP on call, people pay directly. When visiting the ED, an invoice is sent later on. Some hospitals implement a supplementary co-payment at the ED; patients have to pay a fixed amount when using the ED without referral by a physician. Hospitals are free to choose whether or not to charge this fee (26).

METHODS

The study was performed in Belgium in 2 large cities of Ghent and Antwerp (respectively approximately 250.000 and 500.000 inhabitants). We used a mixed methods design, combining quantitative and qualitative research. Both methods add complementary data to answer the research questions.

Quantitative part

Subjects

During two weekends in January 2005, (24 hours during each weekend: Saturday 12 am until Sunday 12 am), we invited all patients (or their escorts) who came to the ED and the GP out-of-hours service, to participate for the quantitative part.

Instrument

Participants were interviewed by trained medical students using a structured and previously piloted questionnaire (6 domains and 39 items). The interviews took place on the spot, before people were seen by a physician. We collected sex, age, reason for encounter (RFE), date and hour of consultation of all patients that used either service, whether they participated or not. No further questions were asked if participation was refused. People who agreed were enrolled for the complete interview, including following items: having a family physician, who decided and why a particular service was chosen, the nature of the medical problem, knowledge about the payment system and the use and amount of co-payment, having used one of the services in the past 12 months and what in their opinion could diminish the (inappropriate) use of ED. In the last section socio-demographic data was gathered: nationality, language usually spoken at home, marital status, level of education, employment, income and medical insurance. Finally, the attending physician was asked for the diagnosis and whether subsequent hospitalisation had been necessary.

Analysis

Data gathering and statistical analysis were performed using respectively SPSS 14.0 and SPSS 17.0. We used chi^2-tests when comparing 2 or more nominal variables. We did not include data of non-participants in the analysis.

Qualitative part

Subjects

For the qualitative part we randomly asked patients or attendants who agreed to participate for the quantitative interview, whether they also wanted to take part in a semi-structured interview. We selected a purposeful sample, based on an equal distribution of: GP and ED visitors, male/female, child/adult/aged, socio-economic characteristics and severity of the problem.

GP service users were visited in the week following the consultation. An appointment was made and a trained interviewer (researcher) visited the patients at home and used a semi-structured questionnaire in a face to face interview which took between 30 and 45 minutes. ED visitors were, after they gave permission, interviewed on the spot.

Instrument

We used a 6 item questionnaire which was piloted in Antwerp at the ED and at the GP out-of-hours service (Table 1).

Analysis

With the participant's permission, the conversation was recorded on minidisc. The interview was conducted with

Table 1: Semi-structured questionnaire used in the qualitative part of the study

Item	Question	Sub-questions
Item 1	Socio-demographic data	Age Profession Nationality Language Marital status Number of children at home Medical insurance
Item 2	Reason for encounter	Medical complaint How long did the problem exist? Why seek help now?
Item 3	Knowledge about the used service	How did you know about the service? Did you ever use it before? Who decided?
Item 4	Reason for choosing that service	Accessibility Medical factors Financial factors Organisational factors Advice of peers
Item 5	Experience	Former use of this service? What was the experience? How often did you use this service? Did you consider seeking help at the other service?
Item 6	Payment system	What do you know about the payment system? Ever paid a co-payment amount? Would co-payment reduce the number of ED visitors? What would be efficient to diminish unnecessary ED use?

attention to the non-verbal communication of the participants, interesting data was subsequently recorded by the interviewer as field notes. Interviews were transcribed verbatim and subsequently independently encoded by two researchers (PH and RR). After consensus in coding, categories were allocated. They analysed the data by constant comparison, using a grounded theory approach. Most striking citations per question were highlighted. Since with the last of 21 interviews, no new ideas or labels were added, we concluded data saturation was achieved (27-29).

RESULTS

Characteristics of the respondents

Quantitative analysis

Out of 985 out-of-hours service users, 198 (20.1%) refused participation, with 787 cases remaining in the analysis (Table 2).

The medical reasons for seeking help at either service are represented in table 3. At the GP services, the most common reasons are found in ICPC2 chapters A (general and unspecified), R (respiratory) and D (digestive). At the ED the 3 most common ICPC2 chapters are: L (musculoskeletal), A (general and unspecified) and D (digestive) (Table 3).

Qualitative analysis

We recruited a purposeful sample of 21 patients: 12 at the ED and 9 at the GP services. The characteristics of the patients are described in Table 4.

There were no great differences in the medical reasons for presenting at the ED or the GP service. At the ED most reasons were minor trauma (ICPC2 chapters L and S). Other problems were: coughing (R), stomach pains/vomiting (D) and psychiatric problems (P). At the GP people presented with minor trauma (L and S), fever (A), coughing (R) and stomach pains/vomiting (D). These reasons are similar to those found in the quantitative part. (table 3)

Did patients know about the payment system and were they aware of co-payment systems at the ED?

Quantitative study

In total 565 (71.8%) respondents answered they knew the payment system. The question was responded positively more frequently in the GP service than in the ED. (GP: 248/337, 73.6%; ED: 317/450, 70.4%, $p > 0.05$) The question of their knowledge concerning the co-payment system was answered positively in 305 cases (38.8%). (GP: 175/337, 51.9%; ED: 130/450, 28.9%, $p < 0.01$). A minor share of respondents correctly estimated the amount of co-payment. (GP: 55/337, 16.3%; ED: 32/450, 7.1%; $p < 0.01$) The difference between the knowledge of the co-payment and the amount that is charged is significant between the GP and the ED users.

Qualitative study

The participants of the interviews were asked 3 questions: 'do you know the co-payment system?, when is the co-payment charged? and what is the amount?'. Out of 21 participants

Table 2: Socio-demographic data of the participants of the quantitative part

Total		N = 787
Service	ED	450
	GP	337
Sex	Male	405
	Female	380
	Not registered	2
Age patient	Mean (SD)	35.42 (24.70)
	Range (Min – max)	0-93
	Missing	35
Employment	Yes	403
	No	354
	Missing	30
Health insurance	Yes	750
	No	19
	Missing	18
Nationality	Belgian	677
	African Sub-Saharan	8
	North African	24
	Turkish	19
	Other	56
	Missing	3
Language usually spoken at home	Dutch	663
	French	20
	Other European	52
	Other African	25
	Other	23
	Missing	4
Marital status	Married or living with partner	507
	Single	121
	Single with dependents	55
	Others (home for the retired...)	89
	Missing	15
Family GP	Yes	709
	No	75
	Missing	3
Knowledge about different payment systems at the GP service and at the ED	Yes	565
	No	59
	Missing	163
Knowledge about co-payment	Yes	305
	No	476
	Missing	6

Table 3: Medical reasons for seeking help at the GP service and at the ED (quantitative study)

ICPC 2 chapter 'reason for encounter' RFE	GP service (%)	ED (%)	Total
A: General and unspecified	96 (28.5)	83 (18.4)	179
B: Blood, blood forming organs	1 (0.3)	0 (0)	1
D: Digestive	68 (20.2)	62 (13.8)	130
F: Eye	3 (0.9)	13 (2.9)	16
H: Ear	9 (2.7)	5 (1.1)	14
K: Circulatory	6 (1.8)	8 (1.8)	14
L: Musculoskeletal	33 (9.8)	119 (26.4)	152
N: Neurological	19 (5.6)	26 (5.8)	45
P: Psychological	6 (1.8)	17 (3.8)	23
R: Respiratory	72 (21.4)	47 (10.4)	119
S: Skin	17 (5.0)	58 (12.9)	75
U: Urological	2 (0.6)	6 (1.3)	8
X: Female Genital	0 (0)	3 (0.7)	3
Y: Male Genital	2 (0.6)	2 (0.4)	4
Z: Social Problems	1 (0.3)	0 (0)	1
Missing	2 (0.6)	1 (0.2)	3
Total	**337**	**450**	**787**

9 people did not know anything about the payment system at the ED (6 GP users, 3 ED users). 9 participants mentioned being aware of the co-payment system at the ED (3 GP users, 6 ED users), but none of them knew the amount that had to be paid.

Which factors influenced the choice of a particular out-of-hours service?

Quantitative study

In the questionnaire 9 questions were included to assess perception and former experience at the ED. The 3 most mentioned reasons for choosing the ED are: accessibility, proximity and competence of the staff.

Qualitative study

All the different factors that steer help-seeking behaviour are classified in four categories: accessibility of the service, the medical problem itself, the waiting time between the first contact and the moment of seeing a physician, professionalism and availability of technical examinations.

Table 4: Characteristics of the participants

Total		N = 21
Service	ED GP	12 9
Sex	Male Female	8 13
Mean age patient (Y)	32.3 (min 1 – max 71)	
Mean age interviewee (Y)	41.2 (min 19-max 71)	
Profession	employee self employed housewife student retired unemployed	11 1 3 1 2 3
Additional insurance at the mandatory health insurance	insurance for hospital care extra private insurance	13 1
Nationality	Belgian	21
Language usually spoken at home	Dutch French/Dutch Arab language	18 2 1
Marital status	married or living with partner divorced living at home with parents single missing data	15 3 1 1 1
Number of children at home	no children 1 child 2 children 3 children or more missing data	7 6 3 3 2

Reasons for seeking help at the ED rather than at the GP service, are summarized in Table 5.

Patient 1: *'I did not hesitate and went to the ED, even if it did not seem necessary afterwards... I decide and no-one else.'*

Reasons why people prefer to seek help at the GP service instead of the ED are illustrated in Table 6.

Patient 2: *'You can tell a GP more about your problem, he has a broader insight into the problem'*

Patient 3: *'I always go to the GP on call. If necessary he can refer us to the ED'*

Waiting time is a factor that is mentioned in an ambiguous way concerning the ED; both opinions are mentioned: *'you get help quickly at the ED'* and *'you have to wait a long time at the ED'*.

In general the GP out-of-hours services are experienced as having shorter waiting times than the ED does.

Table 5: Reasons for preferring ED rather than GP in the qualitative study

Category	Specific reason (number of times mentioned)
Accessibility	• Our own GP is not available (4) • A (known) specialist doctor is available (e.g. paediatrician) (4) • ED is easily accessible (1) • Not knowing that there is a GP on call (1)
Medical problem	• I was worried it was neurological (1) • Pain became unbearable (1) • Need for X-rays (3) • GP referred me to the ED (2) • School director sent them to the ED (1)
Waiting time	• Waiting time is acceptable (4)
Professionalism/ technical equipment	• Competence of the staff/quality of care (2) • Availability of X-rays (1) • Good reputation of hospital (1) • Bad experience with GP on call (2)

Table 6: Reasons for preferring GP rather than ED in the qualitative study

Category	Specific reason (number of times mentioned)
Accessibility	• Always somebody available (1) • Short distance (1) • Possibility of home visits for elderly (1) • Easy to find (3) • Our own GP was not available (2)
Medical problem	• A known medical problem (chronic disease) (1) • Choice depends on severity of the problem (4) • Minor medical problem (2) • Anxiety (2)
Waiting time	• Waiting time is acceptable (1) • Waiting time is only important in case of severe pain (1)
Professionalism/ technical equipment	• GP can decide whether there is a need for X-rays (5) • Confidence in the GP (2) • Good experience with GP on call (1) • Competence of the staff (1) • 'You can divulge more to a GP' (1)

Do patients consider co-payment a useful tool to diminish inappropriate use of services?

Quantitative study

On the question 'did you ever postpone a visit to the ED because of the co-payment system?' 4 participants (0.5%) answered positively. (GP: 2 and ED: 2)

The odds of not knowing about the co-payment system were significantly higher in people visiting the ED than in people who used the GP service. (OR 1.783; 95% CI: 1.493-2.129)

Qualitative study

People did not mention the payment or co-payment system spontaneously when reflecting on what influenced their choice. We only received reactions concerning this when the interviewer specifically asked about their knowledge concerning the payment system and whether or not this was of any influence in their choice. None of them thought the payment system had an influence on their decision.

> Patient 4: '*The payment was of no influence on my decision. When I think my illness is serious, not a temperature of 38°C, but really serious, you must go to the ED.*'

On the other hand people were concerned that for 'other' people, a co-payment system could be a problem. Quotes were only made in the third person, expressing that co-payment would not be a problem for themselves but perhaps for other patients, minority groups or needy people.

> Patient 5: *'No, that would not change anything for me, but I have private insurance. I can imagine for other people with low budgets, ... that could be different...'*

> Patient 6: *'My sister once had lower back pain. She wanted to go to the ED, but I told her about the co-payment and she did not go...'*

When we asked them their opinion about the overuse of the ED and alternatives to diminish this, ten out of 21 respondents, mostly GP visitors, recognised the problem. They also agreed with taking measures against misuse of these services.

> Patient 7: *'Of course this is necessary! Emergency departments are there for emergencies, The name speaks for itself, doesn't it! You do not have to go there to seek help for a cold or a small wound!'*

> Patient 8: *'Yes, I understand. In the end, the staff at the ED has to take care of the patients who really need help. When they start to take care of people who do not need immediate care, in a way that is... taking physicians away from people who really need them. So eh...'*

On the other hand, we found respondents at the ED who replied that, in their opinion the ED have got a primary care function and therefore have to attend to small medical problems.

> Patient 9: *'When something happens during the weekend, I go straight to the ED. During weekdays, I always go to my family physician. The GP on call..., I will never call him again!'*

Which measures do patients suggest that could help to diminish overuse of ED for minor medical problems?

Finally, participants were asked if they had any suggestions to diminish the overuse of ED. Most of the suggestions considered were, information for patients about: tasks and possibilities of the different services and the amount of the co-payment and when it is imputed.

> Patient 10: *'In my opinion, it is quite unpleasant, when entering this ED service, you never know how much you will have to pay afterwards. It is all very dim!'*

> Patient 11: *'Maybe a poster at the entrance of the ED might do, giving notice about the kind of problems you can seek help for at the ED and at the GP services. Or by giving messages of public interest using commercial spots on television. Perhaps family physicians could play a role in this information-process.'*

What kind of medical problems can a GP deal with and when do they most certainly have to seek help at the ED? Respondents feel that the GPs and the staff of the ED have an important role in informing patients. Also public media was mentioned for broadcasting radio or television spots. Leaflets and posters at the GPs praxis and at the ED can help too.

One patient suggested that a general practitioner cooperative would be interesting, because of the easy access and the continuous presence of a GP. This would make primary care as accessible during out-of-hours as the ED.

DISCUSSION

Findings

In this study we used two research methods to obtain more insight into patients' awareness of payment systems during out of hours care. We also assessed the influence of co-payment on their choice. We received complementary data using the quantitative and qualitative design of our study and triangulated results. We conclude that patient knowledge is largely incomplete. Furthermore, co-payment of an amount of € 12.50, seems not to be an important driver for patient choice.

The quantitative part enabled us to assess a 48 hour sample at the GP out of hours service as well as at the ED in two urban regions. Our sample of the population is small but valid. We did not find differences in the medical reasons for seeking help at either one service compared to former research in Belgium and other countries (30-32). 'Musculoskeletal' problems take the lead at the ED, whereas 'general and unspecified' problems are number one at the GP service. Reasons for seeking help at one or another service are similar to what we can find in literature. The most common reasons for using the ED are; accessibility, proximity, and competence of the staff. Other research adds 'the opinion that X-rays will be necessary' and 'the continuous availability of a doctor' as supplementary arguments. Also the reasons for seeking help at the GP services are very comparable to these studies: minor medical problem/choice depends on the severity of the problem, GP can refer if necessary/GP can decide whether there is a need for x-rays, easy to find, confidence/you can

divulge more to a GP (23, 32, 33). Moreover, our results are consistent between the quantitative and qualitative part of our study.

To diminish overcrowding, most studies described measures to change the financial and organisational aspects of EDs (34). Rarely the patients perceptions, ideas or concerns were studied (35, 36). Former research elicits their need for information about the different tasks of the services, reorganisation and accessibility of primary care during out-of-hours and triage (37-41). In our study we highlight the knowledge and ideas of patients about the co-payment system at the ED and in relation to other factors.

Only 11.1% of the participants made a correct estimate of the amount of the co-payment. None of the participants mentioned payment systems spontaneously during the interview. Moreover, when specifically asked about it by the interviewer, they all respond that the payment was of no interest in their choice. On the other hand, however, we can conclude in the quantitative study that the chance of not knowing about the co-payment system is almost twice as high at the ED than it is at the GP service. Striking citations could also be heard concerning 'other' people (a sister, 'needy people') who might be influenced in their choice because of financial implications. This stresses concerns when implementing financial measurements.

The majority of our respondents agreed with measures to diminish overuse of the ED. Most important seems to be that people should be well-informed, not only about cost-implementations but especially about the task profile of the different out-of-hours services. What kind of medical problems can a GP deal with and when do they most certainly have to seek help at the ED? Respondents feel that the GPs and the staff of the ED have an important role in informing patients. Also public media was mentioned for broadcasting radio or television spots. Leaflets and posters at the GPs praxis and at the ED can help too. Few respondents spontaneously mention that the GP will refer them to the ED if necessary (citation patient 3). None of them mentioned a 'gatekeepers' role' of the GP as a possible measure to reduce unnecessary ED use.

Limitations

The limitations of our study are found in a possible selection bias.

Both questionnaires were edited and piloted in Dutch and French. Patients who did not speak either one of these national languages were excluded for the qualitative study. In the quantitative study, 100 participants (12.7%) admitted to speaking another language at home, but possessed enough knowledge of Dutch to be able to participate. Thus, we may not extrapolate our results to people who were, due to language problems, unable to participate. Another reason for bias based on language and nationality could be that minority groups are more likely to refuse a home visit after consulting the GP. It is well known that those people have other choice behaviour and encounter different problems than other people do and often receive a lesser quality of medical care due to language or cultural differences. Also accessibility of health care services is different (42, 43). On the other hand, ethnic and racial minorities are exposed to different environmental and health risks, which also lead to other choice behaviour (44). Research, specifically focused on these patient groups is therefore necessary.

Another type of selection bias can be caused by the location in which our study was performed. Our results might have been different in rural regions (45). The services are organised in very different ways and differ between urban and rural regions. Some areas organise out of hours primary care in a GP cooperative, where secretarial offices, car and driver are available. Other regions only use a generic telephone number which leads directly to the GP on call. Analogue research has to be done, when aiming at conclusions for rural regions.

Suggestions

When intending to shift from ED to GP services for minor medical problems, aiming at just one measure is no option. Implementing co-payment seems to be of little value but can cause adverse effects and might lead to inequity of care. Information campaigns aiming to address the entire population, through television stations or flyers, can clarify the role of each player in out-of-hours care (46). As 'Supply seems to induce demand', one extra measure could be to enhance patients' self-reliance. By informing people about frequent medical problems which are harmless and self-limiting and giving them solutions they can easily apply without any professional care, the overuse of medical care (not only at ED but also in primary care) might be diminished.

An important question to keep in mind is, how can we inform minority groups and pursue equity in medical out-of-hours care? More research will be necessary. Qualitative study designs will be most useful in clarifying the problems of this population.

CONFLICT OF INTEREST: None.

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