BMJ Open

Reasons for emergency department use of low-acuity attender: results from the prospective, multicentre, cross-sectional EPICS-9/PiNo-Bund study

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To cite: Slagman A, Schmiedhofer M, Legg D, *et al*. Reasons for emergency department use of low-acuity attender: results from the prospective, multicentre, cross-sectional EPICS-9/PiNo-Bund study. *BMJ Open* 2025;**15**:e090681. doi:10.1136/bmjopen-2024-090681

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (https://doi.org/10.1136/bmjopen-2024-090681).

Received 01 July 2024
Accepted 14 February 2025

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ABSTRACT

Background The number of low-acuity emergency department (ED) visits varies across Europe and is often posited as a contributing factor to ED crowding. Many health policy-makers and health professionals assume that these cases are 'avoidable' ED visits or could be referred to other ambulatory healthcare providers.

Objectives This study examines the care-seeking behaviour and the reasoning behind patients with low-acuity ED attendance according to emergency triage.

Design and setting In a prospective multicentre cross-sectional survey, patients were invited to participate in an anonymised, paper-based survey in the waiting areas of nine EDs in Germany (2018–2020). The survey included questions on sociodemographic characteristics, reasons for using the ED, previous consultations in the outpatient healthcare system, self-rated urgency and knowledge of other emergency care structures. Due to the variance of missing values in the different responses, the valid percentages are shown.

Results Of the 2752 survey respondents, 41.1% (n=1 120) indicated that 'pain' was the primary complaint for their ED attendance. Self-rated urgency was 'less urgent' for 58.7% (n=1552), 'urgent' for 41.3% (n=1093) and 57.7% reported the first episode of their symptoms (n=1505), with 30.8% (n=830) with symptom onset on the same day. The majority of patients completed the survey on weekdays (94.6%) between 08:00 and 18:00 (82.2%). 80.1% stated that they had a general practitioner (GP) (n=2103) and 55.8% contacted their GP before attending the ED (n=1403). In 77.8% of patients with GP contact, a visit to the ED was recommended by practice members or the GP (n=1068). The on-call service of the statutory health insurance physicians (SHIP) was contacted by 7.0% (n=172); in 64.6% of these cases (n=115), an ED visit was recommended. Of all patients without contact to the SHIP on-call service, 60.6% stated that they were not aware of these services (n=848).

Conclusions Patients with low-acuity ED attendance stated acute onset and mainly new episodes of symptoms, with pain being the most common chief complaint. A high proportion reported having contacted their GP or SHIP on-call services (if known) but have been referred to the ED. As long as no fundamental changes are made to the provision of timely treatment options in the outpatient care sector, EDs may continue to be the foremost treatment option for these patients.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The study presents an overview on the decision-making processes of emergency department (ED) patients with lower acuity conditions.
⇒ 2700 participants were included who completed the questionnaire, if requested with assistance of ED personnel.
⇒ The study was conducted Germany wide and includes nine EDs with a broad range of geographical regions, hospital sizes and number of patients.
⇒ A proxy for low acuity was used by approaching all patients who were assigned to the waiting room after triage assessment of treatment acuity.
⇒ The study was conducted between 2018 and 2020, and responses may have changed since then.

INTRODUCTION

The number of low-acuity emergency department (ED) attendances might be one contributing factor to ED crowding and can be seen as an indicator of accessibility and quality of care in the outpatient healthcare sector. EDs are seen as 'bellwether for how an overall healthcare system is functioning'.[1] ED usage is the subject of numerous reform proposals and interventions not only in Germany, but also throughout Europe and worldwide. The German healthcare system operates on the basis of compulsory health insurance (either private or statutory, the latter covering the majority of the population) with no gatekeeping to healthcare services. Hence, patients are in the position to decide for the appropriate healthcare level and provider from their subjective view of need. Health services are organised in a parallel structure of two

sectors, complicating the coordination and utilisation of healthcare: the outpatient sector consists mainly of office-based physicians organised in the regional associations of the statutory health insurance, for whom the organisation of emergency services for the provision of acute and emergency care for low-acuity patients is part of their public mandate.[2] The hospital sector, and in particular its EDs, in cooperation with the ambulance service, provides acute and emergency care on a 24/7 basis for high-acuity and life-threatening conditions. The lack of patient navigation across sectors, as well as the high proportion of low-acuity ED presentations, led to policy concerns and increased research attention.[3] According to a recent study of routine clinical information recorded in German EDs, 33.2% of total ED attendances could retrospectively be classified as low-acuity presentations which presumably may not require medically defined emergency care in the ED.[4] Therefore, there has been a growing interest in understanding the reasons for the ED use for low-acuity conditions.

In the published literature about ED attenders in Germany, particular emphasis is placed on factors including the anticipated benefits of ED treatment; lack of confidence in primary care; lacking knowledge of alternative services; lacking diagnostic procedures in the outpatient care setting; and a perceived need for immediate attention from a medical professional.[5–13]

Resultantly, the role of social aspects of decision-making such as exchanging and receiving guidance or advice has been under-reported in the German literature on low-acuity attendances. In the international literature, the views of family, friends and healthcare professionals have been identified as a key influence in the decision-making to present to the ED, indicating that both lay and expert advice play a role in turning to urgent care.[14] From the perspective of redirecting patients with low-acuity conditions to outpatient care providers, all factors influencing the decision-making process are important insights into patients' reasons for visiting the ED.[15 16]

In addition to the involvement of lay persons and professionals in the decision to visit an ED, the structure of the German healthcare system with its strict sectoral separation between inpatient and outpatient care plays a decisive role in this process. The availability and responsiveness of the outpatient healthcare system have been reported to be important drivers of low-acuity ED attendances.[17 18] In Germany, statutory health insurance physicians (SHIP) on-call services should cover out-of-hours ambulatory emergency care but a lack of knowledge about these services is reported. Furthermore, long waiting periods for specialist appointments, the lack of out-of-hours services as well as acute availability of general practitioner (GP) appointments or specific diagnostic procedures such as imaging have also been reported to impact the rate of low-acuity ED attendances.[10 11 19] Moreover, qualitative research shows that patients in Germany tend to seek care in the outpatient healthcare system before attending the ED. This behaviour suggests that EDs are only visited as second choice for acute healthcare provision by low-acuity attendances.[6 20]

Understanding the reasons behind emergency care-seeking behaviour is of particular importance in order to understand the problem and present potential solutions for acute health complaints in the German healthcare system. This information is required to inform measures to approach a care provision ideal of receiving the 'right care from the right person at the right time'.[21] Bearing this in mind, the aim of this study was to investigate the patient-reported reasons to attend the ED in Germany with low-acuity conditions as well as self-reported advice and healthcare use prior to the ED visit.

METHODS

As part of the framework of Emergency Processes in Clinical Structures and the PiNo Bund study (clients, treatment pathways and reasons for utilisation in the EDs of hospitals in Germany), patients were invited to participate in an anonymous survey at one of nine participating EDs in Germany. The primary goal of this study was to address the research questions presented in this manuscript. Recruitment was carried out from January 2018 to February 2020 by research personnel in the ED waiting area after first contact with ED staff and initial urgency rating (triage) by a triage nurse, who classifies the treatment urgency according to patients' complaints using the Manchester Triage System (MTS).[22]

Only adult patients (18 years of age or older) with sufficient German language skills to complete the questionnaire, able to understand the purpose of the study and give verbal informed consent were invited to participate.

Within the international literature, a wide array of parameters have been used to distinguish between high and low-acuity ED presentations including but not limited to: disposition, survival, mode of arrival to the ED; triage category and ED diagnosis.[4] While it is widely accepted that identification of low-acuity attendees depends on a range of different parameters, evidence from a recent systematic review suggests that algorithms designed to identify low-acuity attendees are imperfect and incongruent.[23]

In this study, a broad approach to low acuity was chosen to avoid selection bias, whereby self-selection was possible. All patients whose clinical condition did not require immediate medical attention and who were thus able to wait in the ED waiting area and complete the survey were approached for participation. Research staff were trained to sensitively observe any signs of discomfort and were advised to abort the questionnaire in case patients seemed to feel unwell or stressed by the survey situation.

The survey was self-completed by participants, but research staff were on hand to assist with any difficulties. After completion, each survey was checked for plausibility and completeness by the research staff, and if possible, invalid or missing information was corrected or added with the patient. The survey was previously validated.[24] Survey data were then transferred to an

electronic case report form in RedCap (https://www.project-redcap.org/). After study completion, data were extracted from RedCap in a comma-separated format (.csv) and imported to an SPSS file (IBM SPSS V.28, SPSS) for statistical analysis. Data were then checked for completeness and validity. Invalid values were corrected based on the original paper-based survey if possible or otherwise deleted.

The survey consisted of questions about current symptoms and symptom onset, number of visits to an ED within the last 6 months, whether the patient has a GP and or a specialist for the current symptoms and whether the GP or specialist was contacted with respect to the current symptoms. In case the GP practice was contacted, some questions about the GP contact followed (eg, whether the patient spoke to a physician and recommendations given). For patients who didn't contact their GP practice, reasons for not contacting their GP were assessed (eg, assumption that the GP practice was closed, couldn't provide acute care for the current period of symptoms). Then, further questions about the emergency ambulatory care services were asked to assess whether patients contacted these services and whether recommendations were given in case of contact or reasons for not seeking advice or care of those services in case of no contact. This part was followed by questions about advice seeking from further healthcare or healthcare-related institutions and professionals, private social contacts, and other sources of information (eg, pharmacist, family, friends, acquaintances, and online). This part of the questionnaire ended with questions about the preferred healthcare provider with regards to the current episode of symptoms, and a comparison of expected healthcare provision in the ED as compared with the GP considering waiting time, quality of care, overall treatment time at the respective institution, availability of diagnostic and therapeutic procedures, 24/7 care and specialist availability, acute care for unspecific complaints and anonymity. The questionnaire ended with an assessment of sociodemographic information and two free-text comment fields to provide further reasons for attending the ED and further comments. The full set of survey questions can be found in the online supplemental material. The survey was only provided in the German language.

The focus of this exploratory analysis was on the reasons for ED visits and the healthcare use prior to ED attendance. Healthcare use was defined as the number and type of contacts made to other healthcare providers prior to ED attendance and directions given by these services. Absolute and relative frequencies (proportions) are presented for categorical information and median with IQR for quantitative variables. Due to varying numbers of missing values in the respective questions of the survey, valid percent is reported and the number of missing values (nmiss) is indicated for each variable. This analysis is of exploratory nature and thus statistical testing was omitted. All statistical analyses were performed with SPSS (IBM SPSS V.28, SPSS).

Patient and public involvement

There was no patient or public involvement in this study.

RESULTS

In total, 2752 ED attendees completed the surveys of which 51.5% (n=1279) reported to be women, 48.5% (1204) reported to be men and 0.1% (n=2) identified as diverse (nmiss=267). The median age in the study population was 46 years (IQR: 31–62, nmiss=248) and slightly higher in men (47; IQR 32–62) than in women (45; IQR 31–62). Further information on the study population can be found in table 1.

Clinical presentation

The majority of patients presented with 'pain' (41.1%; n=1120; nmiss=26), followed by attendances due to accidents and injuries (18.6%, n=506; nmiss=25), cardiovascular complaints (13.2%, n=360; nmiss=25) and dizziness (12.2%, n=332; nmiss=25). Further presenting complaints had a relative frequency of less than 10% and are depicted in figure 1. The severity of the presenting complaints on a visual analogue scale from zero to 10 was in median 7 and 3.2% of all patients reported having zero complaints when completing the questionnaire (n=88), 30.6% reported a severity between one and five (n=825) and 66.2% a severity of six to 10 (n=1 785; nmiss=55) with 7.8% with a self-reported severity of 10 (n=211). First onset of current complaints leading to ED attendance was reported by 57.7% (n=1 505), recurrent symptoms by 28.1% (n=734) and permanent symptoms by 14.2% (n=571; nmiss=142). Symptom onset was reported to have been on the same day in 30.8% (n=830) and symptoms persisted for 1 day in 16.0% (n=432), 2–3 days in 16.5% (n=445), 4–7 days in 12.2% (n=330) and more than a week in 24.4% (n=657; nmiss=58).

Self-rated urgency was assessed within the clinical triage categories (Manchester triage scale) and was immediate in 4.5% (n=120), very urgent in 7.3% (n=194), urgent in 29.5% (n=779), normal in 48.0% (n=1 270) and non-urgent in 10.7% (n=282; nmiss=107). Time of presentation is listed in table 2.

Considering patients who received advice 74.4% reported having received advice by family and acquaintances (n=1737) while 48.0% answered to have received advice by their GP (n=1034). Directions to attend the ED were given in 52.1% by family and/or acquaintances (n=1118) and in 34.6% (n=706) by the GP (figure 2).

When patients were asked which service they would prefer if they had another hypothetical choice of which service to contact with their current complaints, 41.7% would have chosen the ED again (n=1 049), 24.2% a specialist practice (n=607), 15.6% a GP practice (n=392), 4.3% had no preference (n=109), 2.3% chose other services (eg, directly to a hospital ward, healer), 1.1% would turn to the ambulatory emergency services (n=28) and 0.1% to a pharmacy (n=2). Multiple answers to this

Table 1 Sociodemographic characteristics of all low-acuity patients surveyed regarding the underlying reasons and healthcare use prior to ED attendance in the waiting areas of the participating nine EDs in Germany in 2018–2020

	Total study population (n=2752)	No. of missing values in the total study population (nmiss)
Gender % (n)		267
Women	51.5 (1279)	
Men	48.5 (1204)	
Diverse	0.01 (2)	
Age median (IQR)	46 (31–62)	248
Education % (n)*		279
Primary education	1.9 (48)	
Secondary education	50.3 (1076)	
Tertiary education	46.0 (1137)	
Other†	1.7 (43)	
Professional qualification % (n)		329
No professional qualification	8.3 (201)	
Current trainee	4.6 (112)	
Current student	4.3 (105)	
Completed professional training	48.0 (1163)	
College degree	31.2 (779)	
Other‡	2.6 (63)	
Currently working % (n)	62.3 (1574)	226
Patient born in Germany % (n)	84.3 (2124)	233
Mother born in Germany % (n)	77.9 (1874)	345
Father born in Germany % (n)	76.8 (1824)	377

Sociodemographic characteristics of the whole study population. Explanatory notes: due to a considerable and varying number of missing information, valid percent is depicted and the number of missing values is indicated for each variable in the corresponding column.
*In case multiple answers were given regarding education the highest degree was reported
†Examples for 'other' education were: student or foreign diploma
‡Examples for 'other' professional qualification were pensioners, skilled workers, and master craftsmen.
nmiss, number of missing information; prof., professional.

question were given by 9.6% (n=264) and missing values occurred in 8.7% (nmiss=239).

Figure 3 depicts the rating of perceived or suspected care characteristics between the ED and a GP practice to further illustrate possible reasons why patients would attend an ED instead of a GP practice.

DISCUSSION

The study provides a comprehensive overview of patients' reasons and healthcare use, including patient complex decision-making process prior to visiting an ED with low-acuity conditions. Pain was reported as the main complaint, along with a wide range of other health problems that the majority of participants had experienced on the day of presentation at the ED or a few days earlier. The most important aspect impacting patients' decision to present to the ED in this study was the advice by professionals, social contacts and further sources of information. This finding is in line with both national and international evidence.[16]

When studying the social process of patients' decision-making, research can benefit from a more detailed distinction and time pattern of social contacts prior to ED attendance than this study provided.[25] With regards to the healthcare professional advice-givers contacted prior to the ED visit, the majority of patients reported to having a local GP practice (80.1%), and more than half of the patients had contacted their GP practice (55.8%). However, 77.9% reported that they had been sent to the ED by the GP practice, while the SHIP telephone hotline also referred the majority (63.2%) of advice-seekers to the ED.

From the perspective of redirecting patients with low-acuity conditions to the outpatient care sector, the high number of directions by the addressed professional health services is to be emphasised and this study provides further evidence that advice from other services may be contributing to demands on the ED. Within the study population, respondents reported having received referrals from a range of healthcare professionals including: GPs, specialists, SHIP telephone hotline and pharmacies.[26–28] With that said, it should be noted that contacting these services does not necessarily equate to receiving directions to other healthcare providers than the ED. However, there is no information about the number of patients who were kept from using an ED for the treatment of their complaints. On the reporting dashboard of the SHIP telephone hotline,[29] the recommendations for roughly two million assessments in the year 2023 can be accessed: the most common complaints at that hotline were fever, nausea/vomiting, abdominal pain, cough and headache; 4.7% of the patients calling were categorised as emergency and 42.9% were advised to seek care as fast as possible (within 4 hours). The level of care, meaning whether patients were advised to seek care in the ED or in the ambulatory healthcare system, is not depicted on the website. Therefore, future research should investigate whether and to what extent ambulatory care services offer alternatives or advice concerning other settings of care than the ED and assess in more detail which resources might be lacking in the ambulatory setting in order to meet acute care demands of low-acuity patients. Notably, around 40% of respondents stated that they would go to either an ED or a GP practice with the same complaints if both were available even though the majority of patients were surveyed within usual GP practice opening hours.

Concerning the involvement of lay persons, 74% of the respondents had sought advice from family and

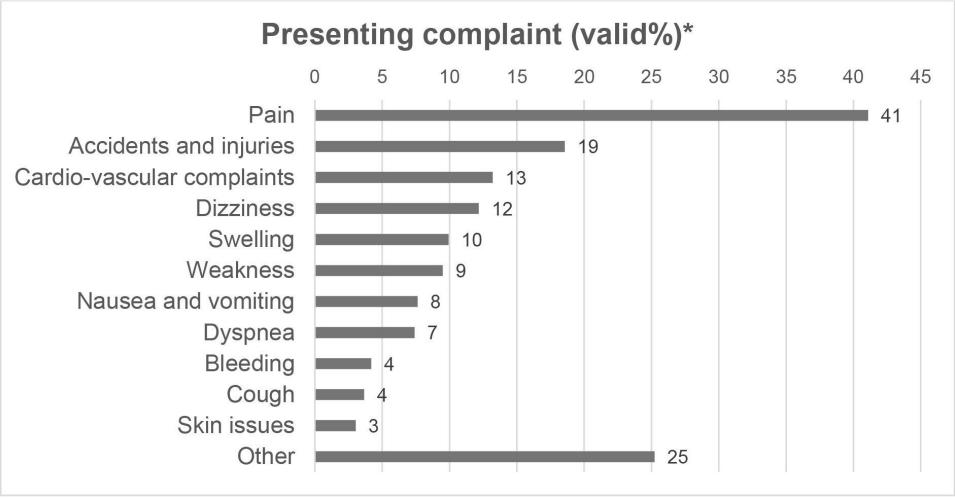

Figure 1 Presenting complaints of all low-acuity patients surveyed regarding the reasons and healthcare use prior to emergency department (ED) attendance in the waiting areas of the participating nine EDs in Germany in 2018–2020. Presenting complaints of the whole study population (n=2752). *Multiple responses were possible and therefore the individual percentages don't add up to 100%.

acquaintances prior to attending the ED and thus contributed to a higher percentage to the decision than healthcare professionals. Thus, first-hand or secondhand experience of lay persons with their own healthcare and potentially also health literacy contributes to the recommendation of the assumable most suitable healthcare provision. This result supports previous findings that service user interpretation of what constitutes a medical 'emergency' and where it is best cared for is driven in part by lay advice. Interventions which seek to alter individual service user behaviour must consider that the decision to attend the ED is likely to be influenced by social networks and professional encounters. Strategies must therefore address and convince social environments of more suitable options for patients with lower acuity conditions.

The findings of this study do indicate that participants were aware of and willing to use alternative sources of care: while the results fall short of contradicting findings that low-acuity attendees lack information about alternatives to the ED, as more than half of the patients contacted one or more healthcare professionals, the question arises how many alternative sources of care service users are expected to be aware of and contact prior to attending the ED.[5 7 10 12 30] Given the fact that the ED offers a wider range of resources, 24 hours a day, 7 days a week, going to the ED can be seen as a 'rational' decision when: perceived urgency, prospect of time saved, and access to diagnostic facilities such as imaging, labs and expertise are taken into account.[31] In addition, the majority of patients perceived the quality of care and the access to diagnostic and therapeutic options including specialists in the ED higher than from GPs.

The recommendations of medical experts and lay persons to go to the ED may also be based on those factors, which contradicts the assumption that service users with lower acuity conditions are the so-called 'convenient' consumers of healthcare.[32] This is also confirmed by the comparison of quality features for medical treatment between the ED and GP or specialist practice, as the majority of patients perceived the quality of care and the access to diagnostic and therapeutic options including specialists in the ED higher than from GPs. Only in terms of waiting and overall treatment time, practices are rated superior to EDs. However, these disadvantages are outweighed by availability and perceived higher quality of care.

Limitations

The primary limitation of this study is the use of patients eligible to wait in the ED waiting area as a proxy for 'low-acuity' conditions. For this reason, this study can only comment on potentially low-acuity conditions. In addition, despite the active request for participation, self-selection cannot be completely excluded, and the number of non-responders is not documented.

A secondary limitation is the potential for social desirability bias. While there are several benefits to using the self-report survey, including its relative cost-effectiveness, ease of use and flexibility, the use of this methodology comes at the cost of discrepancy between actual and self-reported behaviour.[33] Even though no identifiable data were recorded, when the results were returned to the ED and research professionals checking for missing information, they may have believed they would be condemned if they reported going straight to the ED without first contacting alternative services. With that said, the potential impact of this type of response was reduced by the removal of participants who were observed to give conflicting answers throughout the survey.

Furthermore, patients were mainly surveyed during weekdays and within usual working hours and showed a high proportion of patients with higher education and with a German background which indicated selection bias. This, on the other hand, allows us to draw

Table 2 Time of presentation, general practitioner and specialist availability and contacts to the primary care system prior to an emergency department (ED) attendance of all low-acuity patients surveyed regarding the underlying reasons and healthcare use prior to ED attendance in the waiting areas of the participating nine EDs in Germany in 2018–2020

	Total study population (n=2752)	No. of missing values in the total study population (nmiss)
Presentation time % (n)		20
08:00–11:00	38.1 (1040)	
11:00–15:00	29.6 (809)	
15:00–18:00	14.6 (398)	
18:00–23:00	11.2 (305)	
11:00–08:00	6.6 (180)	
Day of the week % (n)		18
Monday	18.8 (514)	
Tuesday	18.2 (498)	
Wednesday	20.4 (559)	
Thursday	19.2 (524)	
Friday	18.0 (492)	
Saturday	3.8 (103)	
Sunday	1.6 (44)	
ED visits within the last 6 months % (n)		98
None	71.2 (1889)	
1	18.8 (499)	
2–3	7.8 (208)	
4 and more	2.2 (58)	
Having a GP % (n)		126
No	7.0 (184)	
Yes	80.1 (2103)	
Yes but not in this town	12.9 (339)	
Having a specialist for current complaints % (n)		137
No	58.5 (1 531)	
Yes but not in this town	34.9 (961)	
Yes	4.7 (123)	
Having contacted the GP practice for current complaints % (n)		237
No	44.2 (1112)	
Yes	55.8 (1403)	
In case of GP contact prior to ED visit—frequencies of answer 'yes' % (n)		
	n=1403	
Were you able to report your symptoms to practice staff?	93.6 (1274)	42
Did you have direct contact with a physician?	80.0 (1090)	40
Did you make an appointment for a later time point?	28.5 (371)	101
Did the practice staff advise you to attend the ED?	77.9 (1020)	94
Did the practice provide a referral form to the ED?	52.5 (685)	98
In case of *no* GP contact prior to ED visit—frequencies of answer 'yes' % (n)		
	n=1112	
Have you considered to contact a GP practice?	45.2 (482)	45
Did you suspect the GP practice to be closed?	43.1 (450)	67

Continued

Table 2 Continued

	Total study population (n=2752)	No. of missing values in the total study population (nmiss)
Did you consider a GP practice appropriate for your current complaints?	31.7 (320)	102
Does your GP practice offer short-term appointments for acute conditions?	37.8 (384)	96
Did you suspect that complex diagnostic and or therapeutic procedures are necessary?	65.5 (658)	108
Were you not able to attend your GP practice due to working hours or personal reasons?	20.7 (209)	104
Were you deeply concerned about your current symptoms?	67.3 (687)	76
Did you have a work-related accident?	17.7 (184)	71
Were you transported to the ED by ambulance?	24.7 (264)	42
Did you attend the ED because you have already been treated at this specific ED/hospital?	40.8 (426)	67
Telephone hotline of the statutory health insurance physicians % (n)		
Having contacted the ambulatory emergency services % (n)		291
No	93.0 (2289)	
Yes	7.0 (172)	
In case of contact to ambulatory emergency services—frequencies of answer 'yes' % (n)*		
	n=172	
Were you able to report your symptoms to the ambulatory emergency services?	85.8 (145)	3
Did you have personal contact with a physician?	60.4 (99)	8
Did the ambulatory emergency service advise you to seek care in a GP practice?	21.6 (35)	10
Did the ambulatory emergency service advise you to seek care in an ED or hospital?	63.2 (103)	9
Did the ambulatory emergency service provide a referral form to the ED?	22.0 (36)	8
In case of *no* contact to ambulatory emergency services—frequencies of answer 'yes' % (n)		
	n=2289	
Have you considered to contact the ambulatory emergency services?	7.8 (166)	154
Did you consider the ambulatory emergency services appropriate for your current complaints?	8.2 (187)	412
Did you suspect the ambulatory emergency services to have long waiting times?	41.1 (750)	463
Did you suspect that complex diagnostic and or therapeutic procedures are necessary?	55.1 (1022)	435
Were you unable to attend the ambulatory emergency services due to working hours or personal reasons?	10.6 (197)	425
Do you know the ambulatory emergency services?	39.6 (824)	207
Were you deeply concerned about your current symptoms?	72.4 (1488)	233
Did you have a work-related accident?	9.0 (207)	246
Were you transported to the ED by ambulance?	13.9 (318)	193
Did you attend the ED because you have already been treated at this specific ED/hospital?	44.7 (921)	229

Time and day of presentation, general practitioner and specialist availability and contacts to the primary care system prior to an ED attendance or reasons for not contacting the ambulatory care system of the whole study population who participated in the survey.
Explanatory notes: due to a considerable and varying number of missing information, valid percent is depicted and the number of missing values is indicated for each variable in the corresponding column. Conflicting answers in different questions occurred during data quality checks and respective answers were rated invalid. These are added to the number of missing values in the table to indicate the total number of invalid and missing responses.
GP, general practitioner.

conclusions for patients who might be eligible for treatment in the ambulatory care sector since practices should be available during these times. Additionally, German patients with higher education, like the study population, should have some further requirements for GP practice care in Germany like sufficient language skills and having a healthcare insurance. Furthermore, the generalisability of the results to countries with different healthcare system structures may be limited. In addition, patients under 18 years and those without sufficient German language skills

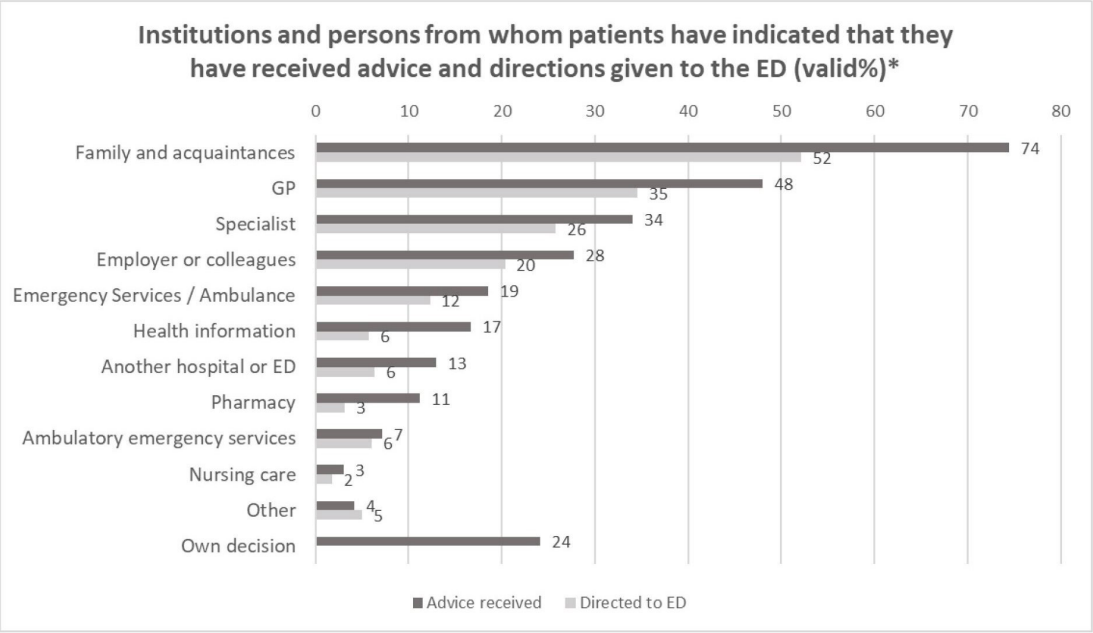

Figure 2 Institutions and persons patients with a low-acuity emergency department (ED) attendance contacted for advice prior to ED attendance and directions to the ED given by the respective persons and institutions of all low-acuity patients surveyed in the waiting areas of the participating nine EDs in Germany in 2018–2020. The number of missing values for the respective variables varied between 418 and 886. Examples for 'other' persons or institutions: police, physician of the employer, lifeguard, passer-by and railroad staff. *Multiple responses were possible and therefore the individual percentages don't add up to 100%; ED, emergency department; GP, general practitioner.

were excluded from participation and should be subject of further research. It also seems like patients who re-present to the ED were under-represented in this study. This might have led to bias regarding some questionnaire items like an over-estimation of prior advice-seeking behaviour and also restrict generalisability. Moreover, the study was conducted between 2018 and 2020 and patient demand may have changed since then. However, patients' numbers declined during the COVID-19 pandemic but have now returned to or above the level of 2020.

Conclusion

In line with the results of a previous study,[10] the results highlight that the decision to consult the ED with a

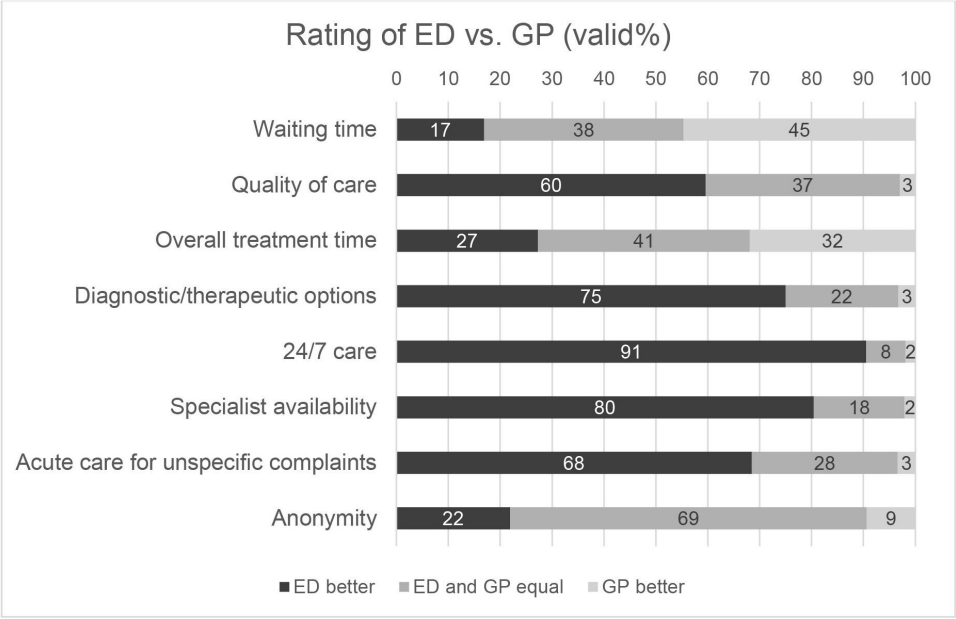

Figure 3 Patients' rating of service features in the emergency department (ED) in contrast to the general practitioner (GP) practice of all low-acuity patients surveyed regarding the reasons and healthcare use prior to ED attendance in the waiting areas of the participating nine EDs in Germany in 2018–2020. nmiss: 462–694.

low-acuity condition was not made by the patients alone and is not driven solely by 'convenience ' but was the result of a decision-making process that involves advice-givers from patients' social networks as well as health-care professionals and further sources of information. The majority of low-acuity patients in the ED reported having been directed to the ED by ambulatory health-care professionals including GPs, specialists, paramedics, nurses and consequently, therefore strategies to redirect patients with lower acuity conditions from the ED to the ambulatory care system have to take these findings into account. Further research should follow two lines: first, research should further explore outpatient providers' reasons for ED advice, including a detailed assessment of lacking resources for acute care provision for low-acuity emergencies within the outpatient care sector is needed. As long as no fundamental changes are made to the provision of timely, treatment options in the outpatient care sector in Germany, EDs may continue to be the foremost treatment option for these patients from a lay and health-care professional point of view. Second, a detailed understanding of the social process of advice exchange in acute health situations among lay people and the role of health literacy in it is needed to tailor information and public campaigns.

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Funding This work was supported by the Central Institute for Statutory Health Insurance Physicians in the Federal Republic of Germany, Berlin.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained directly from patient(s)

Ethics approval The study protocol was reviewed and approved by the Institutional review board of the Charité—Medical University Berlin (EA2/071/16) and the study was conducted in accordance with the Declaration of Helsinki. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

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