## Geriatric support in the emergency department: a national survey in Belgium

Els Devriendt, RN, MSN1,2,\*

e-mail: [els.devriendt@kuleuven.be](mailto:els.devriendt@kuleuven.be)

Isabelle De Brauwer, MD, PhD3,4,\*

e-mail: [isabelle.debrauwer@uclouvain.be](mailto:isabelle.debrauwer@uclouvain.be)

Lies Vandersaenen, RN, MSN1

e-mail: [liesvandersaenen@hotmail.com](mailto:liesvandersaenen@hotmail.com)

Pieter Heeren, RN, MSN1,2

e-mail: [pieter.heeren@uzleuven.be](mailto:pieter.heeren@uzleuven.be)

Simon Conroy, MB ChB, PhD5

e-mail: [spc3@leicester.ac.uk](mailto:spc3@leicester.ac.uk)

Benoit Boland, MD, PhD3,4

e-mail: [Benoit.Boland@uclouvain.be](mailto:Benoit.Boland@uclouvain.be)

Johan Flamaing, MD, PhD2,6

e-mail: [johan.flamaing@uzleuven.be](mailto:johan.flamaing@uzleuven.be)

Marc Sabbe MD, PhD7,8

e-mail: [marc.sabbe@uzleuven.be](mailto:marc.sabbe@uzleuven.be)

Koen Milisen, RN, PhD1,2

e-mail: [koen.milisen@kuleuven.be](mailto:koen.milisen@kuleuven.be)

Corresponding author

1 Department of Public Health and Primary Care, Academic Centre for Nursing and Midwifery , KU Leuven, Kapucijnenvoer 35/4, 3000 Leuven, Belgium.

2 Department of Geriatric Medicine, University Hospitals Leuven, Herestraat 49, 3000 Leuven, Belgium

3 Division of Geriatric Medicine, Cliniques universitaires St-Luc, Brussels, av Hippocrate 10, 1200 Brussels, Belgium

4 Institute of Health and Society, Université catholique de Louvain, clos Chapelle-aux-champs 30, 1200 Brussels, Belgium

5 Geriatric Medicine, University Hospitals of Leicester, Leicester, LE1 5WW, UK

6 Department of Clinical and Experimental Medicine, Gerontology and Geriatrics, KU Leuven, Herestraat 49, 3000 Leuven, Belgium.

7 Department of Emergency Medicine, University Hospitals Leuven, Herestraat 49, 3000 Leuven, Belgium

8 Department of Public Health and Primary Care, Emergency Medicine, KU Leuven, Kapucijnenvoer 35/4, 3000 Leuven, Belgium

\* [The first two authors have contributed equally to the work] – or- [joined first authorship]

**Corresponding author:** Koen Milisen, Academic Centre for Nursing and Midwifery, KU Leuven, Kapucijnenvoer 35/4, B-3000 Leuven, Belgium; Tel: +32 16 336975; Fax: +32 336970; koen.milisen@med.kuleuven.be

## Abstract

**Background**:

Older people in the emergency department (ED) represent a growing population and increasing proportion of the workload in the ED. This study investigated the support for frail older people in the ED, by exploring the collaboration between the geriatric services (GS) and the EDs in Belgian hospitals.

**Methods**:

An electronic cross-sectional survey in all Belgian hospitals with an ED (n = 100) about care aspects, collaboration, education and infrastructure for older patients in the ED was collected. Descriptive analyses were performed at national level.

**Results**:

Forty-nine of 100 surveys were completed by the GS. The heads of the ED returned only 12 incomplete questionnaires and these results are therefore not reported.

Twenty-six of the 49 heads of GSs (53%) indicated that there was an agreement between the geriatric and the emergency department concerning the management of older people on the ED.

A geriatrician was available for specific problems, by phone or in person, in 96% of the EDs during daytime on weekdays. Almost all responding hospitals (96%) had an inpatient geriatric consultation team, of which 85% was available for specific problems at the ED, by phone or bedside during the daytime on weekdays. Twenty-nine heads of the GSs (59%) reported that older patients were screened at ED admission during the day to identify ‘at risk’ patients. The results of the screening were used in the context of further treatment (76%), to decide on hospital admission (27%), or to justify admission on a geriatric ward (55%). In the year preceding the survey, 25% of the responding hospitals had organised geriatric training for ED healthcare workers. Thirty-four heads of the GS (69%) felt that the infrastructure of the ED was insufficient to give high-quality care for older persons.

**Conclusion**:

Collaborations between EDs and GS are emerging in Belgium, but are currently rather limited and not yet sufficiently embedded in the ED care. Exploratory studies are necessary to identify how these collaborations can be improved.

**Keywords**: geriatric patients, geriatric support, emergency department, survey

## Background

Older people in the emergency department (ED) represent a growing population and increasing proportion of the workload; about 12-21% of the ED patients are 65 years and older, and this number will increase [1, 2]. Older patients often present at the ED with non-specific complaints, multiple co-morbidities, physical and cognitive impairment, polypharmacy and poor social support [1, 3], rendering the care for these patients complex. Underestimation of health care problems and functional decline after ED discharge are common in older ED patients [4-6]. They are more likely to be admitted to the hospital and experience more unplanned readmissions after ED discharge compared to a younger population [4-6]. There is a need to better understand how the ED environment and care processes can be attuned to the needs of older [1].

Recent studies have focussed on geriatric emergency care models [7-15]. These care models are characterised by different components such as geriatric risk screening, Comprehensive Geriatric Assessment (CGA), geriatric recommendations and referrals resulting in an individualised care plan and follow-up care after ED discharge. The implementation of such care models resulted in some positive trends towards service related outcomes: reductions of unplanned readmissions [8-10, 15, 16], hospitalisation [9-11, 14, 15] and patient related outcomes e.g. functional decline [12, 16, 17]. Despite the high heterogeneity in the care models, collaboration and exchange between the ED team and specialists in geriatric care is part of most models (e.g. team discussions).

As many professionals are involved in the unplanned care for older people admitted to the ED, knowledge and expertise is needed to deal with the needs of these patients. Collaboration between the ED and a geriatric expert team can support care delivery, education and training [18, 19].

In Belgium, geriatric care has been officially organised by a Royal Decree approved in 2007 [20]. This care program comprises among others an inpatient geriatric consultation team (IGCT) [21]. These mobile multidisciplinary teams support health care professionals in treating geriatric patients admitted to non-geriatric units. However, presence of IGCTs on the ED is not mandatory. A Belgian survey on the implementation and performance of interdisciplinary IGCTs reported that only a minority collaborated with the ED in 2010 (11%) [22]. In response to an ageing population in Belgian (, this survey aimed to investigate the current support for frail older patients in the ED, and collaborations between geriatric services and EDs in Belgian hospitals.

## Methods

Study design

We conducted a cross-sectional survey from December 2013 till February 2014 in all Belgian hospitals with an ED (n = 100).

Participants

A questionnaire was addressed to the heads of the GS and the ED. For hospitals with campuses on different geographical locations, heads of the GS and ED were asked to complete the survey for each campus separately.

Development and validation of the questionnaire

The content of the questionnaire was developed in cooperation with the College for Geriatrics and the College for Emergency care, two bodies created by the Belgian Government to set up quality improvement initiatives in geriatric and emergency medicine, respectively.

Before finalising the questionnaire both content and face validity were evaluated. The content validity of the Dutch version of the survey was assessed by five geriatricians and one emergency physician according to the methods of Lynn and Polit (data not shown) [24, 25].

The comprehensibility and usability of the questionnaire were evaluated by five other experts from the College for Geriatrics (n=4) and the College for Emergency Care (n=1), by asking ‘*Is this question understandable?*’ Amendments were made to ensure clarity and ease of understanding. The Dutch questionnaire was translated in a French version by a bilingual geriatrician, but no back translation was performed.

The final questionnaire comprised 45 questions in two sections. The first section included 35 questions about the care for older patients in the ED and the collaboration within the ED (collaboration between ED physicians and geriatricians, the geriatric consultation team in the ED, accessibility of the geriatric day hospital, the use of screening tools to identify high-risk geriatric patients, geriatric education on the ED and the presence of appropriate infrastructure and specific geriatric procedures). The second section included 10 questions concerning general information of the hospital (e.g. name of the hospital, number of hospital days of people aged 75 years or older, number of geriatric beds, number of geriatricians and availability of a social worker for the ED).

Data collection

The questionnaire was sent to the heads of the GS and ED of each of the 100 hospitals. ‘Lime survey’ software was used for the on-line completion of the questionnaire. Electronic reminders were sent after four weeks. Participants received a 50 Euros fee after completing the questionnaire. Follow-up by phone or personal contact with possible respondents was not undertaken.

Data analysis

Data were analysed at the aggregated, national level and not by individual hospital. Descriptive analyses were performed by using the statistical package IBM SPSS Statistics 22 (SPSS Inc., Chicago, IL).

Ethical considerations

This research was approved by the Medical Ethics committee of KU Leuven (ML10046). Informed consent was assumed by returning a completed survey. The participation was voluntary and personal information was handled confidentially.

## Results

Sample characteristics

Of the study population (n=100), seventy-eight questionnaires were returned from the GSs. Returned questionnaires were removed if only the general information of the hospital was completed (n=29). A total of 49 surveys (49% response rate) were collected successfully. Five of the seven university hospitals completed the survey, representing 10% of all respondents. The main characteristics of the sample are given in Table 1.

*<Please insert Table1 around here >*

The heads of the ED returned only 12 questionnaires. Due to the low response rate and many missing data within the returned questionnaires, the results from the ED are not further reported in this paper.

Survey results

*Involvement of the geriatric team in the ED*

Twenty-six of the 49 heads of GSs (53%) indicated that there was an agreement, mainly informal, between the geriatric and the emergency departments concerning the management and the flow of older people in the ED (n=14, 54%). Six out of 23 heads of GS without such agreements, planned to develop one in the future.

A geriatrician was available for specific problems, by phone or in person, in 96% of the EDs (n=47) during the daytime on weekdays, while one third (n=16) saw every older patient with a frailty profile. Five institutions held geriatric rounds in the ED at specific time points, but none provided a continuously physical presence. All these proportions decreased during the night and weekend (table 2). Admission to a geriatric ward was agreed by a geriatrician in collaboration with an emergency physician in 43% (n=21) of the hospitals, while this decision was taken by the geriatrician alone in 33% (n=16). Ninety-four per cent of the heads of the GS (n=46) stated that the physical availability of a geriatrician on the ED added value to the management of older people in the ED.

Almost all responding hospitals had an IGCT (96% n=47), which 85% (n=40) was available for the ED, by phone or bedside for specific problems, during the daytime on weekdays. One in five of these IGCTs (n=9) saw every older ED patient after a phone call from ED staff, while 9% (n=4) were present in the ED at specified time-points. NoIGCT was continuously present on the ED. All these proportions decreased during the night and weekend (table 2). Forty percent (n=17) of these teams used a geriatric assessment adapted to the ED context, while 42% (n=18) answered to specific clinical requests. These often comprise ‘request for admission on a geriatric ward’ (74%, n=32), ‘judgement about the need for hospitalisation’ (63%, n=27) and the ‘application for social needs assessment’ (56%, n=24). Eighty-one percent of the heads of the GS (n=35) stated that the IGCT has an added value for the management of older patients in the ED. Also, 79% (n=34) stated that the function of the IGCT in the ED should be extended in the future. Two thirds of the respondents who did not have an IGCT available for the ED (n=4/7), clarified that an IGCT might add value to the ED by assisting in the care planning for frail older patients, assessing the need for hospitalisation and evaluating geriatric syndromes and social, functional or cognitive problems.

Data concerning availability of social workers on the ED are summarised in table 2.

*<Please insert Table 2 around here >*

Forty-two institutions (86%) had a geriatric day hospital. The geriatric day hospital can be defined as an outpatient clinic with the objective of organising diagnostic, therapeutic and rehabilitative activities on a multidisciplinary basis [26]. Seven were located on a separate campus from the ED (16%) but most of these are available for consultation requests from all campuses (5/7).

General practitioners can often (n=38; 91%) make an urgent appointment on the geriatric day hospital to avoid ED attendance. In 87% (n=33) of these geriatric day hospitals, the appointment could be scheduled within three working days.

In 79% (n=33) ED staff could make an urgent appointment in the geriatric day hospital to avoid hospitalisation. In 82% (n=27) of the cases, this was possible within three working days.

*Geriatric screening to identify high-risk geriatric patients*

Twenty-nine heads of the GS (59%) reported that older patients were screened at ED admission during the day to identify ‘at risk’ patients. However, during night and weekend this decreased to 45% (n=22) and 49% (n=24), respectively.

The screening tools used were the ‘Identification of Seniors At Risk’ (ISAR) (n=16) and ‘Geriatric Risk Profile’ (GRP) (n=12) [27, 28]. One customised (or locally adapted) screening tool was mentioned.

The screening was conducted by an ED nurse in 24 hospitals (83%), by the IGCT in four (14%) or by the emergency physician in one (3%). Half of the screening results were not consistently noted in the patient record (n=16).

The screening results assisted health care providers in their decision to call for geriatric support. This is the IGCT in 13 EDs (59.1%) or the geriatrician in six EDs (27%). Furthermore, screening results were used in the context of further treatment (76%, n=22), to decide a hospital admission (27%, n=6), or to support admission on a geriatric ward (55%, n=12).

More than half of the head geriatricians indicated that patients screened as ‘high-risk’ on the ED, should be evaluated by a member of the geriatric team or might benefit from a short-term referral to the GS (geriatric ward or outpatient clinic) before hospital discharge (n=17).

*Geriatric education*

During the past year, 25% (n=12) of the responding hospitals organised a geriatric training for the ED healthcare workers. The mean geriatric training time was 2.9 hours (SD = 2.2) per year.

Training topics were subdivided into two categories: medical problems (e.g. cardiac problems in older people) and management of frail older patients in the ED (e.g. characteristics of a frail older patient).

*ED Infrastructure*

Thirty-four heads of the GS (69%) felt that the ED infrastructure was insufficient to give high-quality care for older people (score 0-10, insufficient = score 5/10 or lower). Most of them (n=30, 61%) scored ≤ 5/10 for the suitability of ED infrastructure to address to the complex needs of older persons. Only nine (18%) gave a score ≥7/10.

## Discussion

Management of older people in the ED is an important issue, not only because of their rapidly increasing proportion, but importantly because of their specific and complex characteristics and risk of adverse outcomes. This survey aimed to evaluate existing support for geriatric patients in Belgian EDs, including infrastructure and education issues, and to explore perspectives on collaboration between GS and ED.

Belgian GSs are present in most EDs, however, this presence varied substantially. Geriatric support in the ED was mainly available on-call, for specific problems and during daytime and weekdays. The availability of IGCTs for the ED in 2014 was 85%, which is much higher than the 11% reported in 2010 in a previous Belgian survey [22]. In 2014, only a few GSs provided systematic support, and none offered a continuous presence in the ED. This might introduce important variation in care quality as ED patients are present 24 hours per day, seven days a week. The heads of GS were however convinced about the added-value of geriatric interventions in ED and argued that geriatric support in ED should be extended in the future.

The most frequent reason to consult a geriatric team in the ED was a hospitalisation request. Involving a geriatric care team in ED discharge planning can lead to avoidance of hospital admissions and ED readmissions, more referrals to outpatient services, and more appropriate allocation to geriatric wards [29-31]. Proactive screening for frailty is also important as it can alert emergency caregivers about potential non-urgent geriatric problems, which need further assessment. Despite screening for frailty in all older inpatients being mandatory since 2007 in Belgium, the present survey revealed that it is not widely performed nor documented in the ED notes. Screening is mostly postponed to a later moment during admission. Furthermore, one in four hospitals did not use this frailty profile in the care process of the older people attending the ED. As a first step, screening tools could serve as “triggers” to identify the need for further geriatric assessment. Also, literature suggests that screening in the ED improves efficiency of geriatric interventions [30, 32-34]. Screening in ED could help in bed allocation for patients requiring hospitalisation, assigning the most vulnerable to geriatric evaluation and management units, where patient outcomes are better [35]. Secondly screening might sensitise the healthcare workers on the ED with regard to the needs of frail older people.

Education is another way to make emergency colleagues aware of geriatric problems that require geriatric expertise. Geriatric education is frequently lacking in Belgian EDs, according to tshi study (mean 2.9 hours per year), with only one in four hospitals having organised geriatric training for the ED in the previous year. The geriatric heads also reported that ED infrastructure could be improved to meet the specific needs of the older patients - a finding which is consistent with literature [36, 37]. Inadequate infrastructure could expose vulnerable patients to adverse events, e.g. the development of pressure sores when waiting long time on a stretcher. Some studies report that emergency caregivers are concerned by the challenge of managing older patients with complex care needs, and that they would like to receive more training in the concept of senior friendly emergency medicine [38, 39]. Prendergasts’ study demonstrated that a hands-on approach is the preferred learning model for emergency caregivers [39]. Geriatric consultation teams could play an important educational role, by disseminating geriatric knowledge (including in the basic care needs of older people) and being role models in the ED.

The reported increase of geriatric involvement on the ED aligns with the idea of rethinking structures and processes to optimise care for vulnerable older adults. As the classic ED model focuses on rapid assessment and referral; an evolution towards a geriatric ED care model, that addresses complexities among older patients, seems desirable. Providing continuity of care after the ED visit is an essential component of these initiatives, for both inpatients and patients discharged [29, 31, 40, 41]. For this purpose, a follow-up can be planned in a geriatric day hospital. This study demonstrated that already most of the surveyed hospitals allow a referral by the ED or by the general practitioner to the geriatric day hospital. Rapid geriatric evaluation in these outpatient clinics might prevent some of the frequent reported emergency (re)admission(s).

The main limitation of this study is that analysis of the ED physicians’ views was not feasible due to non-response or many missing data. The reason for this low response is related to a political disagreement apart from this study, and as a consequence limits the generalisation and confirmation of the results.

Although the questionnaire was addressed by email, with an electronic reminder, to all Belgian GS heads in their main language (Dutch or French), the response rate of the survey was moderate (49%). The GS heads who returned a complete survey may have different practices and opinions on EDs than the ones who did not respond. The response rate was similar in the three different regions of Belgium (Flanders, Brussels, and Wallonia). Five of the seven university hospitals participated and so academic centres may have been over-represented. As university hospitals often have more resources and another organisation of care, readers should consider possible overrepresentation of innovative care models.

Finally, a newly developed questionnaire was used. Although its content and face validity was evaluated by experts, lack of testing other psychometric properties, i.e. inter and intra-reliability, could have affected the results. Nonetheless this study has the advantage to highlight some key aspects on the current collaboration between ED and GS in the management of older people in Belgium.

In conclusion, some collaboration between ED and GS is emerging in Belgium, but is currently rather limited and not yet sufficiently embedded in the ED care. Geriatric teams are aware of the added-value of geriatric interventions in ED (i.e. by geriatricians or geriatric consultation teams) and argued that a geriatric function should be embedded in the ED. Further studies with specific attention to macro-level concerns (e.g. political framework of the countries) are necessary to explore how collaboration can be improved.

## Ethics

This research was approved by the Medical Ethics committee of KU Leuven (ML10046). Informed consent was assumed by returning a completed survey. The participation was voluntary and personal information was handled confidentially.

## Competing interests

There were no conflicts of interest

## Funding

None

## Authors’ contributions

ED, IDB, LV, BB, JF, MS and KM made substantial contributions to conception and design of the study. ED, IDB, LV acquired the data and did the analysis of the data. All authors been involved in the interpretation of the data, drafting the manuscript and revising it critically for important intellectual content.

All authors gave final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## Availability of data and materials

In order to guarantee the confidentiality of participating hospitals, data will not be shared.

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## List of abbreviations

ED = Emergency Department

IGCT = Inpatient Geriatric Consultation Team

GS = Geriatric service

CGA = Comprehensive Geriatric Assessment

ISAR= Identification of Seniors At Risk

GRP = Geriatric Risk Profile

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