

Original Article

THE BELGIAN GERIATRIC DAY HOSPITALS AS PART OF A CARE PROGRAM FOR THE GERIATRIC PATIENT: FIRST RESULTS OF THE IMPLEMENTATION AT THE NATIONAL LEVEL

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ABSTRACT

Purpose: In order to deliver individual, specialized and multidisciplinary care for older people, the Belgian national health authorities developed the care program for the geriatric patient. In that context, 48 geriatric day hospitals (GDHs) have been financed by the government since January 1st 2006. The main objective of this study is to describe the patient characteristics, facility features and activities related to the Belgian GDHs.

Methods: A prospective, multicenter study was performed from October 1st till December 31st 2006 in all 48 GDHs. For each GDH a transversal data collection was carried out. In the same period all patients scheduled for the GDHs were registered and followed for 3 months. Therefore two questionnaires were developed using File-maker[®] software: one for each GDH and one for each patient. There were no exclusion criteria.

Results: Six GDHs did not complete one or both questionnaires. Consequently, the results of 42 GDHs were included. GDHs with more years of activity had significantly more new patient contacts per day. Activities in the Belgian GDHs were mainly diagnostic with emphasis on geriatric syndromes and specific medical problems. The reason for admission to the GDH was often multifactorial. The syndromes that motivated patients 75 or older to visit the GDH were clearly geriatric (mainly cognitive disorders) and represent the principle public health problems in this age category. Despite the legal provision preserving GDHs for patients 75 years or older a quarter of all patients was younger than 75, presenting with a geriatric syndrome. The contribution of the general practitioners was limited.

Conclusions: Activities in the Belgian GDHs are mainly diagnostic with emphasis on geriatric syndromes (particularly cognitive disorders) and specific medical problems. More information is needed on the knowledge and expectations of general practitioners in order to establish a closer collaboration.

Key words: Geriatric day hospital, implementation, Belgian care program for the geriatric patient

INTRODUCTION

The demographic evolution in Belgium shows an increasing number of very old people (i.e. ≥80 years) (1). Almost 75% of these over-80 suffer from a (severe) dysfunction and 30% require assistance (2). In order to deliver individual, specialized and multidisciplinary care for the older people and especially the oldest old, before, during and after hospitalization, the *care program for the geriatric patient* has been developed at the national level. The aim of this program is to maximize quality of life and the ability to function independently. It comprises 5 organizational elements: the acute geriatric ward, the geriatric outpatient clinic, the geriatric day hospital (GDH), the internal liaison and the external liaison. It is applicable to anyone aged 75 and over and "concentrates on the detection of frail older people, the standardization and optimization of geriatric care, the provision of multidisciplinary care and the continuity of care" (3). Implementation of this geriatric care program, which started in 2006, is planned in several phases.

The GDH has its origin in the United Kingdom as a part of the rapid changes that occurred in the care for frail older people. GDHs provide multidisciplinary assessment and rehabilitation in an outpatient setting. The main objective is to preserve functional autonomy. The major advantage offered by a GDH is that it produces 'a one-stop shop' approach for those patients with the most complex needs, which would otherwise require multiple visits to different departments, or multiple home visits by different specialists and therapists (4, 5).

Since January 1st 2006, 48 GDHs have been financed by Belgian national health authorities (Federal Public Service health, food chain safety and environment). According to the Royal decree, the main objective of GDHs should be the organization of diagnostic, therapeutic and rehabilitative activities on a multidisciplinary basis. The staff of the GDH financed by this experiment consists of 2 fulltime equivalent (FTE) nurses and 1 FTE paramedic (3). The remaining multidisciplinary team members can be involved if necessary. Each GDH should possess the necessary infrastructure for a minimum of 6 patients. Admission can be requested by a general practitioner, a geriatrician or other specialists (3).

Evidence regarding the GDHs is in general contradictory, inconclusive and fragmentary due to the heterogeneity of studies. The systematic review by Parker et al. showed no benefit of GDHs in terms of mortality reduction (6). Another systematic review conducted by Forster et al. found that geriatric day hospitals appear to be equally effective but possibly more expensive than other forms of comprehensive care for older people (7). A more recent review by Forster et al. supports the exploration of alternative systems for delivering an equivalent form of comprehensive elderly care but does not provide arguments for the closure of geriatric day hospitals (8). The systematic review performed by Day et al. found various assessment approaches and processes and specialist teams ranging from a basic core to an expanded multidisciplinary team. Day et al. concluded that functional outcomes and physical and mental status put together could be considered more important outcomes than simply reduced mortality (9). Few studies have adequately addressed the degree of satisfaction of patients and GPs. Martin et al. found that almost 60% of GPs assumed that hospital admission was prevented by GDH attendance in half of the patients they referred. Ninety-eight percent of GPs were either quite satisfied or very satisfied with the service provided. Patients preferred the company and the diversional activities (10).

Before the introduction of the care program for the geriatric patient, there existed only local experience with GDHs in Belgium. The main objective of this study is to describe the patient characteristics, facility features and activities related to the Belgian GDHs as basic principle for further research. The study was approved by the ethical committee of the Ghent University Hospital.

METHODS

Study design

This prospective, multicenter study was performed in all 48 Belgian GDHs recognized by the Belgian federal health authorities in the frame of an experiment. For each GDH a

transversal data collection was carried out. From October 1st till December 31st 2006 all patients scheduled for the GDHs were registered and followed for 3 months. There were no exclusion criteria.

The research team consisted of 6 members from 2 university hospitals (3 geriatricians, 2 paramedics and 1 statistician – Liege and Ghent). Two questionnaires were developed using Filemaker® software: one for each GDH and one for each patient. These were sent to the hospitals electronically or by mail. Moreover, a member of the research team visited each GDH to complete information.

GDH questionnaire

Data on the years of activity of the GDH, the number of patients, the focus of care (assessment, diagnostic and therapeutic interventions, rehabilitation activities, prevention strategies) and the use of screening and assessment tools were collected through a questionnaire sent in advance. During the visitation of the GDHs all questions were checked together with a local staff member.

Patient questionnaire

For every new patient data were collected on admission. Questions comprised socio-demographic data, data on social complexity using SOCIOS (developed by the French Society for Geriatrics and Gerontology (11)), reason for admission, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), diagnosis (International Classification of Diseases, 9th revision), comorbidity, and medication. Questions on outcome (hospital admission, actual health status) were completed 3 months after the first admission. During this 3 month-period, the date of every follow-up visit was recorded. Data were filled-in by members of the GDH staff.

Statistical analysis

All statistical analyses were performed using SPSS® version 13.0 software. Categorical variables were compared with the chi-square test, continuous variables with the student t-test and one way-ANOVA. In addition multiple pair wise comparisons were made using the Bonferroni procedure. For lack of normality Mann-Whitney test and Kruskal-Wallis test were performed.

RESULTS

Six GDHs (10.4%) did not complete either one or both questionnaires. Consequently, the results of 42 GDHs (25 in Flanders, 14 in Wallonia and 3 in Brussels) were included. Geographically, the remaining GDHs were evenly distributed over the three regions (Flanders, Wallonia, and Brussels) and made up a representative sample of the GDHs in Belgium.

In the individual patient questionnaires some values were missing also. For the sake of clarity, the denominator has been mentioned systematically.

GDH description

Twenty eight GDHs were already active before the start of the care program for the geriatric patient in 2006, nine of them for more than 5 years. *Ten* GDHs started their activities since January 1st 2006. *Four* GDHs did not answer this particular question. GDHs with more years of activity had significantly more new patient contacts per day (Table 1).

Table 1: Description of the geriatric day hospitals

Years of activity of GDHs, n (%)	
< 1 year	10 (23.8)
1-5 years	19 (45.2)
> 5 years	9 (21.4)
unknown	4 (9.6)
Number of new patient contacts/day, mean (SD)	
GDH < 1 year of activity	1.42 (1.09)
GDH 1-5 years of activity	1.67 (3.08)
GDH > 5 years of activity	2.14 (4.93)

Table 2: Reasons for referral

Activities (n=2519), n (%)	
Diagnostics	2138 (84.9)
Therapeutics	459 (18.2)
Rehabilitation	113 (4.5)
Other	85 (3.4)
Reason for diagnostics (n=2519), n (%)	
Geriatric syndrome	1429 (56.7)
Specific medical problem	1231 (48.9)
Prevention	329 (13.1)
Geriatric syndrome (n=2519), n (%)	
Cognition	998 (39.6)
Reduced mobility	311 (12.3)
Fall	276 (11.0)
Mood disturbance	232 (9.2)
Frailty	214 (8.5)
Pain	171 (6.8)
Weight loss	122 (4.8)
Urinary incontinence	119 (4.7)
Malnutrition	61 (2.4)

Activities in the Belgian GDHs were mainly diagnostic with emphasis on geriatric syndromes – cognitive decline was by far the main reason for referral to the GDH – and specific medical problems (e.g. heart failure, anaemia). The main therapeutic interventions were blood transfusions (3.85%, n=97/2519) and parenteral administration of drugs (11.04%, n=278/2519). Rehabilitation programs were available in 9 GDHs (21.4%) but attendance was limited (4.5%, n=113/2519). The reason for referral was often multifactorial (e.g. anaemia and malnutrition) as illustrated by a total percentage higher than 100% (Table 2).

Patient's description

A total of 2519 patients were included. Their characteristics are shown in Table 3.

Overall, GDHs with more years of activity had a younger population. A quarter of all patients (n=577/2347) was younger than 75. Nevertheless, 43.6% of them (n=254/577) were referred for the elaboration of a geriatric syndrome. Slightly more than 6% of all patients (n=122/2519) were urgent referrals. Seventy six percent of all patients (n=1861/2426) was still living at home, alone or with a relative. Fifty percent (n=1043/2048) was receiving professional home care. As we didn't define professional home care any further (e.g. nurse, cleaning aid) we could not link the extent of professional care to the degree of dependency of the individual patient.

Table 3: Description of the patients

Mean age, years (SD)	78.9 ± 7.43
Male, n (%)	925 (37.2)
Patients < 75 years (n=583), n (%)	
GDH < 1 year of activity	40 (6.9)
GDH 1 – 5 years of activity	240 (41.1)
GDH > 5 years of activity	116 (20.0)
Missing	187 (32.0)
Residence (n=2426), n (%)	
Home	1861 (76.7)
Family	66 (2.7)
Service flat	67 (2.8)
Long-term care	382 (15.7)
Other	38 (1.6)
Missing	12 (0.5)
Prior hospitalization (n=2186), n (%)	
Overall	553 (25.3)
Geriatrics	298 (53.9)
Internal medicine	93 (16.8)
Surgery	76 (13.7)
Missing	86 (15.6)
Available help (n=2048), n (%)	
None	446 (21.8)
Family	518 (25.3)
Professional help	394 (19.2)
Family + professional help	649 (31.7)
Missing	41 (2.0)
Referral by (n=2519), n (%)	
Physician	2140 (85.0)
Family	81 (3.2)
Own initiative	55 (2.2)
Other	45 (1.8)
Missing	198 (7.8)
Referral by physician (n=2140), n (%)	
General practitioner	800 (37.4)
Specialist	1192 (55.7)
Missing	148 (6.9)

Following the Royal decree, 85% of patients were referred by a physician. Only 40% was referred by the general practitioner and 63% of specialist referrals were made by the geriatrician.

Discharge from GDH

After discharge, most patients returned to their former situation. In 14% of all cases (n=278/1973) some minor adaptations in home care were proposed at discharge, e.g. home nursing. In 1.8% of patients (n=35/1973) more definite changes e.g. institutionalization were considered. Only 2.83% of patients (n=60/2519) were hospitalized directly from the GDH.

For 86.1% of patients (n=2169/2519) a written proposal on care planning and therapy, based on the multidisciplinary evaluation and in some cases the multidisciplinary team discussion, was sent with the patient to the referring physician. About half of the patients (46.7%, n=1176/2519) were advised to start or change medication. Other advises comprised rehabilitation (4.9%, n=124/2519) and environmental adaptations (8.5%, n=214/2519). For 25 patients (<1%) an elective hospital admission was recommended.

Follow-up

For 1583 of all patients (62.8%) follow-up was planned at the GDH (47.7%, n=754/1583), at the outpatient clinic (24.8%, n=393/1583) or at the general practitioner (19%, n=301/1583). For 92 patients (5.8%) follow-up was not specified ("other") and for 43 patients (2.7%) no further information was available. After 3 months follow-up results were available for only 407 patients (16.2%). Sixty seven of these patients were admitted to the hospital and 32 of them died during the 3 month follow-up period after their first admission to the GDH.

DISCUSSION

Based on two questionnaires, this paper presents a descriptive summary of *patient characteristics, facility features and procedures* related to the Belgian GDHs. In general, the response rate is high (42/48), probably due to the fact that government funding of the GDHs implies participation in evaluation studies.

Twenty eight GDHs had already developed a considerable activity level before the beginning of the study. For these, the "care program for the geriatric patient" and the financial incentives involved enabled further growth. Ten GDHs started their activities in the year of the evaluation. This has an important impact on the results of this descriptive study. At the start of a GDH considerable efforts are needed to mobilize enough manpower. Additional personnel is not instantly available in every hospital. This means that patient activities are relatively limited during these first months. The difference in number of patient contacts clearly shows it takes years for a GDH to develop a considerable activity. Moreover, even after 5 years, new patient contacts are still increasing.

The mean age of the patients in GDHs is over 75. Before the introduction of the geriatric care program no official age limit existed for patients visiting the GDHs. Since the start of the program the nomenclature has been restricted to patients 75 and over, resulting in the biggest proportion of over-75 in the new GDHs. Strikingly, in all GDHs an important number of patients under 75 attended, presenting with a geriatric syndrome. Therefore in the Belgian legal context it seems preferable to apply "mean age of 75" as an age limit for reimbursement rather than "75 and over".

The reason for admission is often multifactorial. The syndromes that motivate the over-75 to visit the GDHs are clearly geriatric, with emphasis on cognitive decline, and represent the principle problems of public health in this age category (12; 13).

Therapeutic activities and advices for rehabilitation within the GDHs are scarce. Only 3 GDHs have a thoroughly developed rehabilitation unit. It seems that most GDHs are very hesitant about rehabilitation because of the interference with primary health care. However literature clearly demonstrates that assessment is only meaningful when it is followed by the necessary therapeutic interventions and follow-up of the proposed interventions (14).

In the literature GDHs are recommended more and more to provide crisis intervention and subacute assessment with the possibility of preventing hospital admission or promoting subsequent early discharge (15). Our data show that only

6.4% of patients are admitted directly to a GDH from the emergency department. A possible explanation might be the lack of immediate access to specialist investigations in the majority of GDHs. No information is available on the number of admissions prevented by these (sub)acute interventions. The low rate of hospital admissions following on a visit to the GDH also illustrates the non-urgent character of care in the Belgian GDHs

General practitioners could play an important role in the recognition of geriatric syndromes (such as weight loss, urinary incontinence) and in screening of patients at risk. According to Cigolle, geriatric conditions, although not a target of current models of health care, are similar in prevalence to chronic diseases in older adults and in some cases are as strongly associated with disability (16). Nevertheless, common geriatric conditions are frequently not identified or evaluated in the primary care setting (17; 18). Consistent with the literature, we found the contribution of the general practitioners to be rather limited. Possible explanations might be a lack of information on the working of a GDH and/or a lack of knowledge of geriatric syndromes and their detection (18). According to Rubenstein et al. factors associated with higher patient benefit seemed to be targeting patients most in need, having clinical control of care (rather than only consultation), having multiple follow-up visits and having a higher intensity intervention (14). Therefore primary health care workers need to play an important part in the treatment and the follow-up of the interventions proposed by the GDH team. In order to establish a close collaboration with primary care, a second study to assess knowledge and expectations of primary care workers has been set up.

The main strength of this study is the comprehensive analysis of the implementation of the GDHs at the national level in Belgium. The results will be used to optimize the further activity of the GDHs and their financing. Moreover, this study forms the basis for an additional study on stimuli and barriers for referral by the general practitioners.

An important limitation of this study is the incompleteness of data, both initially and at follow-up after 3 months, due to the fact that the patient questionnaires were completed by local staff in addition to the usual work load and not by an experienced researcher. Although the authors tried to clarify the data as much as possible, these data should be interpreted with caution. Moreover, this study was conducted in the early phase of the implementation of this new care program and possibly does not represent the actual development of the geriatric day hospital. In addition, the lack of intermediate or long-term outcome data from other studies using similar approaches hampers a comparison in terms of added value of GDHs, their cost-effectiveness and clinically-effective care.

Further studies with a prospective design regarding the future development of these initiatives, the robust long-term outcome measures and a tight collaboration with primary care are needed.

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