

Emergency department management of ambulance services

JOSEP GUIL, MARISA RODRÍGUEZ-MARTÍN, MERCÉ OLLÉ, CATALINA BLANCO,
MARÍA TERESA RODELLAR, ENRIC PEDROL

Servei d'emergències. Hospital General de Granollers. Barcelona, Spain.

CORRESPONDENCE:

Dr. Josep Guil
Servicio de Urgencias Hospital
General de Granollers
Avda. Francesc Ribas s/n,
08400 Granollers.
Barcelona, Spain
E-mail: josepguil@terra.es

RECEIVED:

3-10-2008

ACCEPTED:

14-1-2009

CONFLICT OF INTEREST:

Ninguno

ACKNOWLEDGMENTS:

Medical transport company
Serveis Sanitaris VL; to Ms. Aurora
Dueñas, Director dels Sectors
Sanitaris del Vallès Oriental i
Maresme, and Dr. Rafael Lopez,
Technical Secretariat of the
Barcelona Health Region.

Objective: To determine whether hospital emergency service management of ambulance services reduces wait time and complaints about delayed transport.

Methods: A prospective study comparing 2 periods of time, one in which ambulance service was not managed by the hospital emergency department (October and November 2007) and another in which the department did manage the ambulance service (December 2007 and January 2008). The number of transfers, transport time, and complaints received in the 2 periods were analyzed. Ambulance trips taking patients to other hospitals were excluded from the analysis.

Results: During the first period, patients from 544 emergency calls were brought in; in the second period, the service responded to 720 calls for emergency transport. In the first study period, the mean wait time was 2 hours and 4 minutes (maximum wait time, 8 hours). In the second period, the mean wait time was 1 hour and 1 minute (maximum, 4 hours). Five complaints about emergency transport (9 written, 64 verbal) were lodged in the first period. The second period saw no written complaints and 19 verbal complaints. Twice the number of double transports (2 patients in the same ambulance) took place in the second period with in the first period.

Conclusion: Emergency department management of ambulance services brought considerable improvement in the variables studied. [Emergencias 2009;21:183-185]

Key words: Emergency department. Ambulance services.

Introduction

The hospital emergency department (ED) is a fundamental point of health care attention, and the demand for emergency attention is constantly growing. In Spain, this growth is estimated to be approximately 4% per year¹. There are several reasons for the growth of emergency visits: aging of the population, accessibility to ED, high expectations and confidence in health care attention, delay in elective care and the "culture of immediacy" among other factors².

ED overcrowding has become commonplace due to external factors, such as increased patient visits, and internal factors including: increased ED capability, delay in physical examination and complementary tests, hospital admission waiting lists and, for many ED patients discharged, medical transport evacuation.

Transporting patients in an ambulance is an issue of concern to ED services in other countries as in ours, as evidenced by several studies on this topic³⁻⁷, although they focus more on assessing the profile of patients using this mode of transport and whether such use is appropriate or not. However, there are no reports on studies assessing the possibility of the hospital itself managing medical transport, let alone the impact that such management could have on patients.

The aim of this study was to determine the degree of improvement brought about by the use of ambulance transfer managed by the hospital ED service itself.

Method

Hospital General de Granollers (HGG) is the reference hospital for the Vallès Oriental area, offe-

ring specialist attention, as well as social and mental health care for a population of nearly 400,000 people. During 2007, its ED received 139,103 visits (381 mean daily visits), with 12,990 admissions (9.3% of visits). During this period, 13,909 patients arrived at the emergency department by ambulance (10.0% of visits).

We performed a prospective analysis and comparison of two 2-month periods, one in October - November 2007 (Period A) when the ambulance service for ED discharged patients destined for home/other centres was not managed by the ED (the ED only requested an ambulance, a clerk processed the request and an extra-hospital coordinating centre made the decision, without knowing the patients or their circumstances), and another period, December 2007-January 2008 (Period B), when ambulance transport of these patients was managed by our ED. This was performed by the ED physician on duty, who knew the workings of the ED and the ambulance transport company, as well as the geographic area: it was based on the principle of patient priority (considering their condition, degree of dependency or complications) as well as the choice of route to be followed and the number of patients to be transferred by ambulance.

For the study a data base was elaborated to include, inter alia, the number of transfers, the time delay for each transfer and the complaints about the ambulance transfer home/other centre, recorded for each of the two periods.

Emergency transfers to other hospital centres were excluded (secondary transfers), as their particular idiosyncrasies and priorities are not subject to any action from the emergency department.

The medical transport company was the same in both periods; during the second study period, one ambulance was available for ED use from 8am to 8pm. Funding was provided by the local government health authority "Servei Català de Salut", during a period designated "Període Integral d'Urgències de Catalunya (PIUC)", in which the Servei Català, in collaboration with public health network centres, provides increased resources for periods of greater healthcare demand, such as winter flu outbreaks. This ambulance was made available as part of the extra resource provision by PIUC for our hospital during this period.

Results

During the first period without ED management of the ambulance transfer service (Period A), there were 544 transfers and in the second period

Table 1. Results from the two periods studied

	Period A	Period B	p
Nº ambulance transfers	544	720	< 0.01
Average delay	2 h 4 min	1 h 1 min	< 0.05
Maximum delay	8 h	47 h	–
Shared Transport			
– Total	54	118	< 0.05
– With different destination	16	64	< 0.01
Complaints			< 0.04
– Verbal	64	19	< 0.01
– Written	5	0	< 0.05

Period A: when medical transport was not managed by the emergency department. Period B: when medical transport was managed by the emergency department.

with such management (Period B) there were 720 transfers ($p < 0.01$). Mean daily delay (waiting time) in Period A was 2 hours 4 minutes (maximum 8 hours) and in Period B this was 1 hour 1 minute (maximum 4 hours) ($p < 0.05$). During Period A there 5 written and 64 verbal complaints made regarding transport, while in Period B there were no written complaints, but 19 verbal complaints (Table 1).

In Period B there were twice as many shared ambulance transfers (2 patients in the same ambulance) than in Period A (118 and 54 respectively, $p < 0.05$). This was most evident when shared ambulance transfer was not to the same final destination (i.e. A different hospital or residential area): 64 during Period A versus 16 in Period B ($p < 0.01$).

Discussion

One of the factors that aggravate ED overcrowding, at least subjectively, is the presence of patients already attended and discharged due to delay of medical transport. Such delay is subjective, since there are no previous studies which address this issue. Patients waiting in ED for medical transport occupy space, even bays, possibly hindering the medical attention of others. When such patients present situations of high dependency, for example the elderly or disabled, their presence may exacerbate the workload of both physician and nursing staff. Swift evacuation of discharged patients should benefit both patients and the ED service itself.

Knowing the patient, their diseases, degree of complications and dependency allows the establishment of priorities regarding individual or shared ambulance transfer from the ED. In this respect, determining the route to be followed by the ambulance is another possibility to optimize the

transfer, not only considering journey distances but also possible links between different but nearby destinations, thus avoiding the need for each trip to begin and end at the ED.

We did not record the clinical data of patients included in each type of transport or details of those who made complaints, for further evaluation, which could have introduced a bias in the analysis of the results.

In this study we observed an increase in the number of ambulance transfers after ED discharge, decreased waiting time for the transfer and decreased number of complaints made by the users in relation to medical transport. All this indicates improved evacuation and thus less ED overcrowding.

References

- 1 Millá J. Urgencias médicas: algo más que una serie televisiva. *Med Clin (Barc)* 2001;117:295-6.
- 2 Moreno E. Atención urgente o consulta rápida: necesidad de un modelo de respuesta a la demanda social. *Med Clin (Barc)* 1996;106:478.
- 3 Jacob SL, Jacoby J, Heller M, Stoltzfus J. Patient and physician perspectives on ambulance utilization. *Prehosp Emerg Care* 2008;12:176-81.
- 4 Richards JR, Ferrall SJ. Inappropriate use of emergency medical services transport: comparison of provider and patient perspectives. *Acad Emerg Med* 1999;6:14-20.
- 5 Billiter AJ, Moscati R, Janick D, Lerner EB, Seymour J, Olsson D. A multisite survey of factors contributing to medically unnecessary ambulance transports. *Acad Emerg Med* 1996;3:1046-52.
- 6 Yarris LM, Moreno R, Schmidt TA, Adams AL, Brooks HS. Reasons why patients choose an ambulance and willingness to consider alternatives. *Acad Emerg Med* 2006;13:401-5.
- 7 Ruger JP, Richter CJ, Lewis LM. Clinical and economic factors associated with ambulance use to the emergency department. *Acad Emerg Med* 2006;13:879-85.

Gestión del transporte sanitario desde un servicio de urgencias

Guil J, Rodríguez-Martín M, Ollé M, Blanco C, Rodellar MT, Pedrol E

Objetivo: Conocer si la gestión del transporte sanitario en ambulancia desde el servicio de urgencias hospitalario disminuye el tiempo de espera y las reclamaciones por la demora del mismo.

Método: Análisis prospectivo y comparativo de dos periodos de tiempo, uno sin gestión del transporte sanitario (SGTS) en los meses de octubre y noviembre de 2007, y otro con gestión (CGTS) desde el servicio de urgencias en los meses de diciembre de 2007 y enero de 2008. Se recogieron el número de transportes realizados, el tiempo de demora y las quejas recibidas en los dos periodos. Se excluyeron los transportes urgentes de pacientes en ambulancia a otros centros hospitalarios.

Resultados: Durante el periodo SGTS se realizaron 544 evacuaciones y en el periodo CGTS 720. La demora media en el periodo SGTS fue de 2 horas y 4 minutos (espera máxima: 8 horas) y en el CGTS fue de 1 hora y 1 minuto (espera máxima: 4 horas). Durante el periodo SGTS se realizaron 5 quejas por escrito y 64 quejas orales en relación al transporte sanitario, mientras que en el CGTS no hubo quejas por escrito y se registraron 19 quejas orales. En este último periodo hubo el doble de transportes múltiples (2 pacientes en la misma ambulancia) que en el periodo SGTS.

Conclusión: La gestión del transporte sanitario desde el servicio de urgencias en el periodo de estudio supuso una franca mejoría en las variables estudiadas. [*Emergencias* 2009;21:183-185]

Palabras clave: Transporte sanitario. Servicio de urgencias. Ambulancia.