

A prospective study of the process of assessment and care management in the discharge of elderly patients from hospital

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SUMMARY

Assessment and care management (ACM) of elderly patients prior to discharge from hospital has been in place since 1993. It involves a complex multi-disciplinary assessment of needs which may delay discharge from hospital. We prospectively studied the process of ACM in a group of patients discharged from hospital over a three month period. The times taken for completion of the necessary reports, and any delays in the process were recorded. The times of each individual step in the process were correlated to overall length of stay and to the length of the care management process. The effect of intercurrent illnesses or other delays was studied. Of the available sample (n=83), 16 patients died and two required long term hospital care. The median length of stay of the remainder (n=65) was 36 days (range 5-149 days). The median time from the start of the ACM process to discharge was 22 days (0-89 days). The strongest correlation with total length of stay was the time from admission until ACM commenced ($\rho=0.661$, $p<0.0001$). The time spent in the ACM process was related strongly to the time taken for the Care Manager to process the applications ($\rho=0.682$, $p<0.0001$). Delay was recorded in 17 (24%) cases, resulting in an increased length of stay ($p<0.001$). While care management may help in appropriate placement after hospital discharge, these results suggest that it is prone to delays outside the hospital setting. Such delays result in patients waiting in hospital for care packages to be set up in the community. This has implications for acute hospital services.

INTRODUCTION

The rise in the number of elderly people and demand on institutional care were factors leading to the introduction of the Community Care Act (1990),¹ and care management in 1993.² The aim of these was to fit placement according to need, rather than the availability of services, and to prevent inappropriate placements in institutional care from community and hospital. Speedy and appropriate discharge from hospital was to be achieved by comprehensive assessment, and appointing a Care Manager to oversee the process of care management (ACM). The Care Manager was empowered to purchase appropriate services, and had the final say in placement after discussion with the patient, relatives and hospital staff.

The hospital based social worker collates medical, nursing, physiotherapy and occupational therapy reports and forwards them to the Care Manager

appointed for the patient. This can take up to five hours of social worker time.³

There is little evidence that the introduction of ACM has resulted in shorter length of stay,^{4, 5} with one study showing a 52% increase in length of stay.⁶ However all of these studies were

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retrospective. We have carried out a prospective study of elderly patients in a district general hospital. Our aim was to quantify the time spent in different aspects of the ACM process and to identify possible delays.

METHODS

The study was carried out on elderly patients, referred for assessment and care management by their consultant, in the geriatric, medical, and surgical wards of a district general hospital (Ulster Hospital, Belfast). Patients were assessed between October 1994 and January 1995, by one of the authors (FT), who followed them up weekly until discharge. Any inter-current illness or other obvious cause for delay was noted. Written reports from the doctor, named nurse and therapists concerning each patient were sent to the Care Manager by the hospital social worker.

Times taken to complete each stage of ACM from admission to discharge were recorded. General demographic data, home circumstances, medical diagnoses, Barthel activities of daily living score⁷ (maximum independence = 20), and abbreviated mental test score⁸ (best score = 10) were stored on a computerised database.

Patients were divided into groups based on the

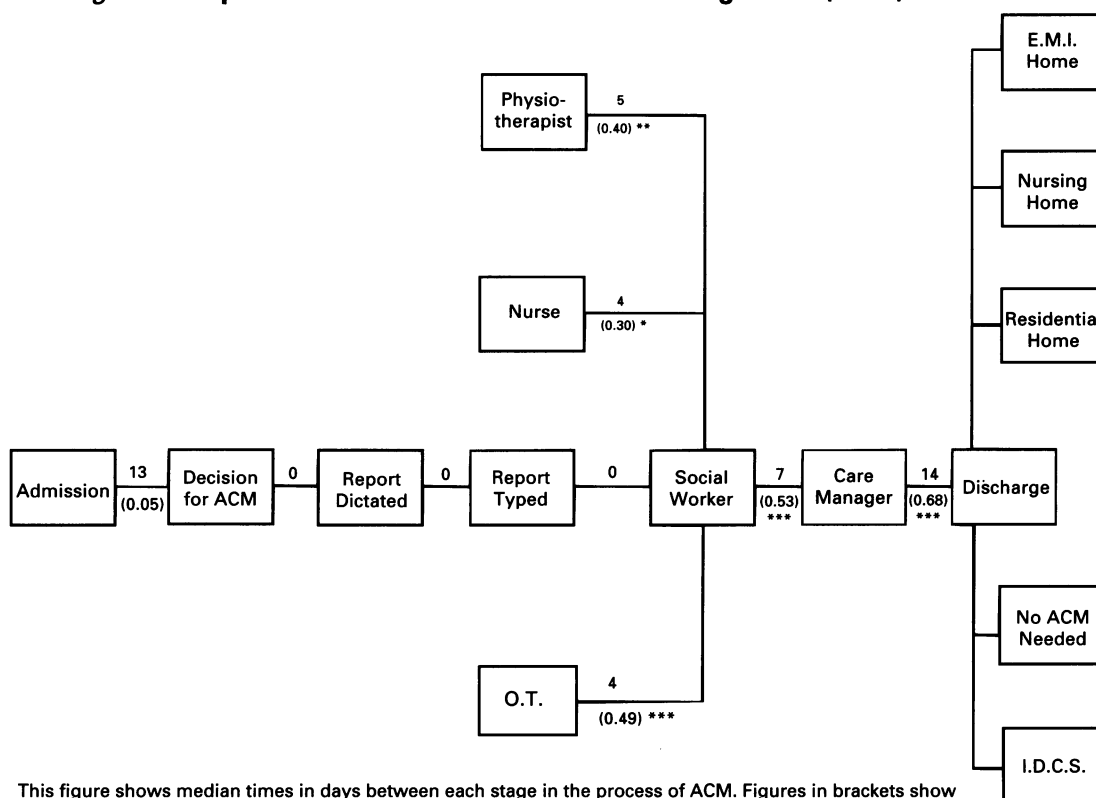
final place of care: (a) home on the intensive domiciliary care scheme (continuing care at home – IDCS), (b) ordinary private nursing home, (c) elderly mentally-infirm private nursing home (EMI), (d) residential home (private and statutory), (e) discharged without care management (including sheltered accommodation), (f) died in hospital or required continuing care in hospital.

Most data were analysed non-parametrically. Spearman rank correlation was used to compare relationships between two continuous variables. If significant, these were submitted to stepwise multiple regression analysis.

RESULTS

Eighty-three patients were entered in the study. Two patients had not been discharged four months after the conclusion of recruitment, and were designated as requiring long-term hospital care. They were not considered further. Sixteen patients died before discharge. Sixty-five cases (46 female) were subjected to analysis. The mean age of the patients was 81.7 years (range 65.7-101.8 years, median 82 years).

Figure. The process of Assessment and Care Management (ACM)



This figure shows median times in days between each stage in the process of ACM. Figures in brackets show Spearman Correlation Coefficients between each stage and the total length of the process. Significance values: * p<0.05, ** p<0.01, *** p<0.001.

The structure of ACM, and the median time taken in each step of it are shown in figure. The destinations of patients in the available sample are summarised in Table 1. There were no significant differences in overall length of stay, time taken for ACM, sex or mental test score, between patients discharged to different types of

accommodation. The only significant difference across the destinations was that Barthel ADL scores were higher in the IDCS group (median 13) compared with nursing home group (median 7, $p = 0.003$), although those who went to nursing homes tended to be older (median age 84 versus 77 years).

TABLE I

Outcome. median length of stay and the median time in days taken for Care Management of patients entered in the study.

<i>Destination/Outcome</i>	<i>Number (%)</i>	<i>Length of Stay (Range)</i>	<i>Time Spent in ACM (Range)</i>
E.M.I.	3 (4.6)	28 (27-82)	25 (23-68)
I.D.C.S.	13 (20)	43 (5-97)	21 (0-45)
Discharged without ACM	12 (18.5)	23* (7-48)	13.5* (7-23)
Private Nursing Home	33 (50.8)	39 (16-149)	27 (3-89)
Residential Home	4 (6.1)	34.5 (21-54)	27 (15-38)
Total	65 (100)	36 (5-149)	22 (0-89)

• 0.01 < p < 0.05 with respect to private nursing home group.

The total length of stay correlated strongly with the time between admission and the decision to submit the patient to ACM ($\rho = 0.661$, $p < 0.0001$ Spearman rank correlation). It also correlated with the length of time spent in the process of ACM ($\rho = 0.705$, $p < 0.0001$). Within this period it was most strongly correlated with the time between the Care Manager receiving the relevant documents to the discharge from hospital, ($\rho = 0.464$, $p = 0.003$). The time taken to prepare all the reports for the social worker was weakly correlated with the length of stay ($\rho = 0.327$, $p = 0.025$).

The time spent in ACM was related to the time between the Care Manager receiving the documents and discharge. It was also correlated with the times taken to produce the various reports and the time taken to get these reports to the Care Manager (figure). Multivariate analysis showed that the only stages of the process related significantly ($p < 0.05$) to the time spent in ACM were: (a) between the Care Manager receiving the documents and discharge, (b) the time between the social worker receiving all reports to the papers being passed on to the Care Manager, and

(c) the time for the nursing staff to get their reports to the social worker.

Delay was recorded in 17 (26%) of patients, in all cases for administrative reasons (Table II). The presence of delay resulted in an increase in the median length of stay from 35 to 46 days, ($p < 0.001$) and an increase in median length of care management time from 17 to 37 days, ($p = 0.0001$) compared to those without delay. In patients subject to delay, the median time for all completed reports to arrive with social worker was increased from one day to seven days ($p = 0.001$). The time from the social worker receiving all the reports to the papers being passed to the Care Manager increased from 6.5 days to nine days ($p = 0.04$). The time from the Care Manager receiving all the documents until discharge increased from 12 days to 18.5 days ($p = 0.008$).

Fourteen (21.5%) of the patients were recorded as having suffered an inter-current illness. The group suffering an illness had a median length of stay of 46 days, ten days longer than those who did not. This was not statistically significant.

TABLE II

Reasons given for delay in Care Management Process.

<i>Age</i>	<i>Sex</i>	<i>Days in ACM</i>	<i>Reason for Delay</i>
82	F	27	Waiting release of funds from care manager
76	F	38	No social work cover available
66	F	37	Patient did not want to go to nursing home despite disability
89	F	89	Doubt in ACM team as to appropriate placement
82	F	34	Relatives disagree with recommendations of ACM team
74	F	27	Relatives disagree with recommendation of ACM team
86	F	41	Patient changed her mind
82	M	50	Patient's wife changed her mind about patient coming home
75	F	19	Awaiting home oxygen
84	F	21	Awaiting Stairlift installation
91	F	29	Relatives unavailable for contact for 6 days
83	F	37	Relatives live overseas
85	F	31	Relatives unavailable for contact for 4 days
87	F	7	No places in home of choice
65	F	45	No places in home of choice
84	M	21	No places in home of choice
78	F	68	No places in home of choice

In 20 (30.7%) cases the original suggestion of discharge destination by the consultant was different from the eventual destination of the patient after discharge. Of ten patients where the suggested destination after discharge was nursing home, four were discharged to both residential home and home without need for ACM, and two were accepted into the IDCS scheme. Of the seven patients recommended for discharge to IDCS, four went to nursing home, three went

home without ACM and one went to residential accommodation. In the remaining two cases (one initially EMI home and one residential home) both went to nursing home. A difference between suggested destination and eventual destination was not significantly related either to length of stay or to time in ACM, but was related to time from admission to commencement of ACM (no difference 21 days, difference 11 days $p < 0.001$).

The 16 patients who died were all submitted to ACM and had a suggested destination after discharge (13 to nursing home, 2 to IDCS, and 1 to residential home). On reviewing their casenotes it was felt that in seven (43%) of these cases death was likely within a short period of time, in the others the deaths were sudden and unexpected.

DISCUSSION

The development of structured assessment on patients being discharged from hospital is a welcome development. Studies of the situation before April 1993 have shown a considerable degree of inappropriate placement.^{9, 10} This paper describes a prospective study of the process of ACM before discharge from hospital. We aimed to identify delays in the process, and to point the way to a more efficient discharge system.

Compared to a previous retrospective study of hospital discharges, carried out in the same unit,⁶ there has been improvement in the mean length of stay (41.1 versus 59.8 days), but no improvement in mean time under care management (22.6 days in previous study versus 24.2 days in this). It would appear from the present study that there are many administrative delays. Some were due to patient choice. Others were due to difficulty in meeting relatives, or having community services organised.

Hospital consultants may attempt to compensate for delays by starting the ACM process as soon as possible. The mean time between admission and referral for care management in this study was 16.8 days, compared with a previous study, (37.2 days).⁶ However, this study suggests that early referral carries the risk of inappropriate recommendation for placement. This undermines the benefit of quick referral to the ACM process. Thus relatives may have been interviewed and may have gone to visit several nursing homes, only to see the patient improve so that such a level of care is no longer necessary. The finding that seven deaths, which may have been expected

according to the hospital notes, occurred in patients who were in ACM gives rise to some concern. This suggests a degree of inappropriate referral. Further research on predicting which patients will ultimately require care management would be useful.

For practical purposes the time intervals in the ACM process were broken into blocks for analysis. These blocks of time may not reflect the unique circumstances that each patient faces during an illness. This study was also limited by the failure of the care managers to cooperate with it. Once the papers had gone to the "black box" of the care manager's office, we have no indication of their progress thereafter. Further studies of this aspect of ACM with the involvement of the care managers would be of value.

This study would suggest that hospital wards are becoming more efficient at early discharge, but the length of the ACM process has not shown any significant improvement. There are still many reasons for an unnecessarily long wait in hospital. Many of these are outside the control of the hospital staff. Further research on the community provision of services will be needed to identify ways of dealing with this ongoing problem.

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