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Premature Discharge in a Community Hospital

L K P Yap, K H K Ow, J Y R Hui, W S Pang

Abstract

Aim: To determine the size of the problem of premature discharge in a community hospital (CH) and to ascertain the reasons for it.

Method: A retrospective review of all admissions in year 2000 which resulted in premature discharge i.e. discharge within one week of admission, was conducted in a community hospital, St Luke's Hospital for the Elderly. Information collected on the selected cases included biodata, reason for CH stay, admitting diagnosis, source of admission, duration of stay and reason for terminating stay prematurely. For cases which required acute hospital transfer or ended in death in the CH, the type and day of onset of the respective medical problems were documented.

Results: Out of 924 admissions in year 2000, 12% resulted in premature discharge. Within this category of patients, 54% were discharged within the first three days and median duration of stay was three days. Majority of the admissions were for rehabilitation (83%) and respite care (15%). Neurological (60%) and orthopaedic (18%) problems constituted the bulk of the admitting diagnoses. The main reason for premature discharge was acute hospital transfer (90%) for medically unstable patients and those with unresolved medical problems.

Conclusion: Premature discharge in the CH is an important issue and the greater cause lies in the need to transfer medically unstable patients or patients with unresolved medical problems back to the acute hospital. Stricter enforcement of admission criteria into CHs, increased vigilance on the part of acute hospitals and implementation of subacute care in CH can be solutions to the problem.

Department of Geriatric Medicine Alexandra Hospital 378 Alexandra Road Singapore 159964

L K P Yap, MBBS (Singapore), MRCP (UK) Registrar

W S Pang, MBBS (Singapore), MMed (Int Med), FRCP (Edin), FAMS Senior Consultant & Head

St Luke s Hospital for the Elderly

K H K Ow, MBChB (UK, Sheffield) Resident

J Y R Hui, MBBS (Singapore), MMed (Public Health) Assistant Director

Correspondence to:
Dr L K P Yap
Tel: (65) 6472 2000
Fax: (65) 6471 4508
Email: philip_yap@alexhosp.com.sg

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INTRODUCTION

It has been recognised that there should be a transitional interface between acute hospitals and the community for certain categories of patients[1]. These are patients who no longer require the intensive and specialised care provided by acute hospitals, yet are not ready to be returned to the community for medical or social reasons. They are commonly post-stroke or post-fracture patients who require rehabilitation and elderly patients who need longer convalescence after acute illness. New terminology such as intermediate care, transitional care, subacute care or post-acute care is used to describe the nature of services rendered to these patients[2]. In Singapore, Community Hospitals (CHs) have been providing this form of care for about a decade. The CH has been defined as an "intermediate care facility between the acute hospital and community based step-down services... (that) provides intermediate care for rehabilitation, medical, nursing and respite care for the sick who require longer in-patient stay but do not require the high technology intervention of acute hospitals[3]." Faced with an ageing population and its implications on the health care system[4], CHs will inevitably assume increasing importance in the near future, if not already so. It is thus necessary to examine the problems faced by CHs which compromise their ability to deliver quality intermediate care. One such issue is premature discharge.

With rehabilitation as its focus in patient care, patients in the CH stay for one to two months on the average. However, it is known that some patients are discharged prematurely, even within a week of admission and it would be important to ask why. Did most of these patients return home

or were they readmitted to the acute hospital? There has been feedback that CHs are periodically receiving inappropriate referrals from hospitals in the form of medically unstable patients or those whose medical problems have not been adequately worked out[5]. These patients are often rapidly referred back to the referring hospitals. Are inappropriate referrals the crux of the problem? The role of CHs has recently been expanded to include subacute care[3], which carries the potential of reducing readmissions to the acute hospital for selected acute or unresolved medical problems. What are the common medical problems seen in CHs that warrant transfer to the acute hospital? Can subacute care manage some of these problems at the CH level? Hence the aim of this paper: to determine the size of the problem of premature discharge in a CH and to ascertain the reasons for it. The issue of whether subacute care can provide a solution to this problem will also be discussed.

METHOD

The study was conducted in St Luke's Hospital for the Elderly (SLH), a CH providing intermediate care mainly to the elderly. It was a retrospective study with the study population consisting of all admissions to SLH in year 2000. All admissions resulting in discharge or death within one week of admission, except those already scheduled on admission for a short-term respite stay of a week or less, were considered premature discharges and hence selected for the study. The case-notes of the selected cases were reviewed for the following information:

1) biodata
2) main reason for admission to the CH
3) admitting diagnosis accounting for CH stay
4) source of admission
5) duration of stay
6) reason for terminating stay prematurely

If the admission was terminated prematurely because of death or medical problems necessitating acute hospital transfer, the type and day of onset of the medical problem were recorded. In addition, the eventual disposition of the cases transferred to the acute hospital was also noted.

RESULTS (all percentages are rounded off to the nearest percentage)

Fig. 1 shows a summary of the study profile. There were a total of 924 admissions in the year 2000. Of these, 110 (12%) satisfied the study criteria for premature discharge. These 110 cases were

Fig. 1 Study profile.

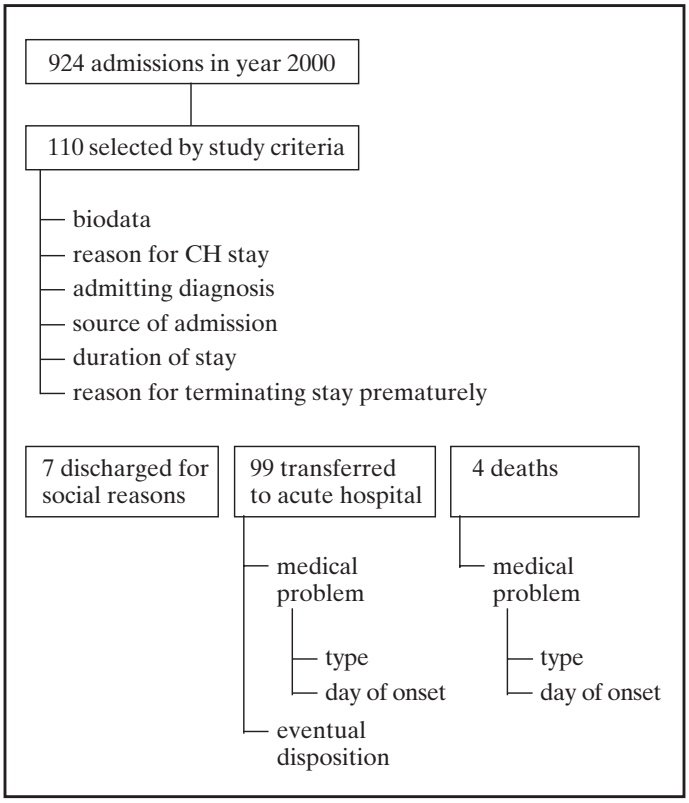

Table I. Summary of results.

	Number	%
Reason for admission		
Rehabilitation	91	83
Respite care	16	15
Chronic care	3	3
Admitting diagnosis accounting for CH stay		
Neurological problem		
Stroke	62	56
Parkinsons	3	3
Myelopathy	1	1
Fracture/arthritis/amputation	20	18
Post major surgery	5	5
Post major illness	4	4
Congestive cardiac failure	4	4
Cancer	4	4
Dementia	3	3
Others*	4	4
Source of admission		
Acute hospital	103	94
St Luke's day assessment clinic	7	6
Duration of stay		
One day	19	17
Two to three days	41	37
Four to five days	25	23
Six to seven days	25	23
Reason for terminating admission		
Death	4	4
Social	7	6
Transfer to acute hospital	99	90

* Includes ESRF, COPD, carer stress

Table II. Cross-tabulation of medical problems resulting in death or necessitating transfer to acute hospital against day of onset of medical problems (n=103).

	D1	D2-3	D4-5	D6-7	Total	%
Unstable parameters/ill	2	9	–	1	12	12
Acute abdomen	–	–	3	1	4	4
Uncontrolled sepsis	5	7	3	6	21	20
COPD exacerbation	8	3	2	2	15	15
Acute cardiac event*	2	3	4	2	11	11
New stroke	–	–	2	2	4	4
Bleeding GIT	6	–	1	1	8	8
Gross haematuria	2	1	2	–	5	5
Deep vein thrombosis	3	–	–	–	3	3
Anaemia	4	2	–	–	6	6
Electrolyte problems	–	3	3	–	6	6
Others**	4	2	2	–	8	8
Total	36	30	22	15	103	–
Percentage	35	29	21	15	–	100

* Includes acute myocardial infarct, acute coronary syndrome, arrhythmia, congestive cardiac failure.

** Includes over anti-coagulation, acute cord compression, acute confusion, acute glaucoma, hepatitis, acute retention of urine(unable to catheterise).

Table III. Eventual outcome of the patients after readmission to the acute hospital (n=99).

	Number	%
Died	15	15
Readmitted to St Luke's	56	57
To another community hospital	3	3
Discharged home	23	23
Discharged to nursing home	2	2

contributed by 95 patients. Eighty-four patients were prematurely discharged once, seven patients twice and four patients thrice.

Reason for CH admission (Table I)

The majority of the admissions were for rehabilitation (83%). Respite care constituted 15% and chronic care 3%.

Admitting diagnosis accounting for CH admission (Table I)

Neurological problems formed the majority (60%). Out of 66 patients in this category, 62 had stroke disease, three suffered from Parkinson's disease and one had a myelopathy. Orthopaedic problems e.g. fracture, arthritis, amputation made up 18%. Other conditions such as post major surgery (5%), post major illness (4%) and congestive cardiac failure (4%) also required CH stay for rehabilitation or for a longer period of convalescence.

Source of admission (Table I)

Although the overwhelming majority of admissions came from acute hospitals (94%), 7 (6%) cases were directly admitted from the day assessment clinic in SLH.

Duration of stay (Table I)

Sixty cases (54%) were discharged within the first three days. The median duration of stay was three days.

Reason for terminating admission prematurely (Table I)

The vast majority (90%) were transferred to the acute hospital for management of medical problems. Four (4%) died in the CH from acute medical problems. Seven (6%) were discharged for social reasons such as "unwilling to stay for in-patient rehabilitation", "prolonged hospitalisation" and "very keen to go home".

Medical problems resulting in acute hospital transfer or deaths in the CH (Table II)

Uncontrolled sepsis (20%), patients with unstable parameters (12%), exacerbation of COPD(15%) and acute cardiac events (11%) were amongst the commonest medical problems that necessitated transfer to the acute hospital for management. More than 1/3 (35%) of these problems were noted on the first day of admission and almost 2/3 (64%) by the 3rd day.

All cases referred back to the acute hospital for anaemia had a drop in haemoglobin levels of at least 2 g/dl from their last known level or a random haemoglobin level of less than 7 g/dl.

Three of the six cases with electrolyte abnormalities had hypokalemia below 2.8 mmol/l. There was a case of asymptomatic hyperkalemia, a case of asymptomatic hyponatremia and a case of seizures as a result of hypocalcemia. The four cases of death resulted from one case of gastrointestinal bleeding on day 2, two cases of sudden death on day 3 and one case of cancer with progressive deterioration leading to demise on day 7.

Eventual outcome of cases transferred to acute hospital (Table III)

Majority (57%) returned to SLH. However, 15% died as a result of medical problems in the acute hospital, 23% were discharged home and 2% to nursing homes. Three patients (3%) were

transferred from the acute hospital to another community hospital.

DISCUSSION

The results of the study confirm that the majority of admissions were for rehabilitation (83%) or respite care (16%) yet a significant proportion of them, 12%, resulted in premature discharge i.e. within a week of admission. In fact, more than half (54%) of these occurred in the first three days. Eleven patients were actually prematurely discharged more than once in the same year. The study reveals that medical problems are the prime reason for premature discharge. Ninety per cent of the cases had to be transferred to the acute hospital for management of various medical problems while an additional 4% died in the CH. Given such a scenario, the question of whether these cases were medically unstable or had unresolved medical problems as early as on the day of CH admission arises.

There is evidence to suggest many patients were medically unstable upon admission as more than one-third (35%) of the medical problems were identified on day 1 in the CH. Perusing the said list of problems, one would surmise that perhaps some of them could have been detected even prior to CH admission by way of increased vigilance in acute hospitals. Patients who appeared ill with unstable parameters, had a new onset of or unresolved fever, appeared short of breath or were obviously pale may have been prematurely discharged from the acute hospital. The three cases of deep vein thrombosis underline the need to be watchful of this condition especially in elderly, post-stroke and post-fracture patients, just the type of patient requiring CH rehabilitation. To avert the possibility of unstable patients being admitted to the CH, it is pertinent to ensure all acute medical issues have been resolved, no new problems have surfaced and the patients are stable with respect to their vital parameters. The list of medical problems brought to light in this study can serve as a useful checklist for doctors before certifying patients fit for transfer to CHs. As many of these patients are in a state of limited mobility, special attention must be paid to the development of problems that result from increased recumbency such as deep vein thrombosis, pneumonia, urinary tract infections and bed sores. In this study, all cases of anaemia and electrolyte abnormalities resulted in premature discharge within three days of admission. Performing the relevant investigations and thereby detecting the abnormalities prior to CH transfer could have prevented such occurrences. Thus, it is not unreasonable to recommend that patients have a full blood count and renal panel repeated a day or two prior to transfer.

A CH admission can be inappropriate not only because the patient is medically unstable or has medical problems inadequately worked up. Some patients or relatives could have consented to CH transfer without fully understanding what it entailed. A small number of patients, seven in total (6%), were prematurely discharged for "social reasons". These were patients who wanted to be discharged home for one or more of the following reasons. They were, "unwilling to stay for in-patient rehabilitation", "prolonged hospitalisation" and "very keen to go home". It is possible that this subset of premature discharges could have been reduced if the patient and relatives had better prior knowledge of the reason for community hospital stay. The relatives can be encouraged to make a visit to the community hospital to better understand the purpose of CH stay. Doctors together with medical social workers and case managers should pay special attention to this aspect of discharge planning in the acute hospital.

It has been opined that CHs face the possibility of receiving from acute hospitals "difficult to discharge" patients who may not have much rehabilitation potential as well. The results reveal only a little more than half (57%) of the cases returned to SLH. It is noteworthy that 25% were either discharged home or to a long-term care facility and not to the CH for continuation of rehabilitation. Several reasons could account for this. First, some of the patients who initially stayed in the CH for respite care did not need it anymore. Second, some patients meant to receive rehabilitation could have deteriorated to the extent that they were poor candidates for rehabilitation. The third possibility may be the patient or family did not want to go back to the CH. However, in spite of these reasons, it remains plausible that some of these patients may not have needed CH admission in the first place and they thus constitute another group of inappropriate admissions.

The role of the CH has been expanded to manage subacute patients and medical emergencies. The Joint Commission on Accreditation of Healthcare Organisation, USA, defines subacute care as "comprehensive inpatient care designed for someone who has an acute illness, injury, or exacerbation of a disease process... rendered immediately after, or instead of, acute hospitalisation...[6]". By this definition, subacute care encompasses managing both acute illness and exacerbation of known diseases. Given that many patients in CHs are in the geriatric age group with expectedly numerous co-morbidities, subacute care

is needed to address exacerbations of the particular chronic ailments faced by the patients. With the provision of trained medical personnel, selected drugs, laboratory and radiological services, certain problems can be managed in the CH first. Acute hospital transfer can still be effected for those who do not get better. In this way, premature discharge by way of acute hospital transfer can be reduced.

The spectrum of medical problems unveiled in this study can serve to guide resource planning for subacute care. Emergencies such as patients with unstable parameters, acute abdomen or active gastrointestinal bleeding, new stroke or seizures, arrhythmias or acute coronary syndromes and severe sepsis would warrant immediate transfer to the acute hospital. However, treatment for electrolyte abnormalities in otherwise asymptomatic patients for example can be started at the CH. Stable patients with sepsis secondary to uncomplicated cellulitis could be treated with oral or intravenous antibiotics in the subacute setting. If a reasonable range of both oral and intravenous antibiotics is available, even undifferentiated sepsis can be managed in CHs with empirical antibiotics and the appropriate antibiotic instituted upon knowing the relevant microbial reports. Deep vein thrombosis can be managed if doppler ultrasound facility is available to confirm the diagnosis and the laboratory facilities can provide results on the patients' coagulation profile within a day for titration of oral anticoagulants. Stable patients with anaemia can also be evaluated and treated. Blood transfusion capabilities should be available for this purpose.

As evident from the above, x-ray, pharmacy and laboratory services must be conveniently available to support the CH in providing subacute care. The niceties on how comprehensive and efficient these support services need to be is a subject for further deliberation. Accessibility and availability must be balanced against cost-effectiveness. In broad terms, x-ray services should be available within one working day. Ultra-sound facilities would be an asset especially in the management of problems like deep vein thrombosis as already discussed, evaluation of abdominal conditions and problems of the genital-urinary tract. Laboratory services should provide 24-hour service for selected types of investigations such as full blood count, coagulation profile, blood gases, renal and liver panels. The range of drugs available should be broadened to include intravenous drugs, especially intravenous antibiotics. Medical personnel, namely doctors and nurses, must have the relevant training and experience to handle acute medical problems. Finally, medical care can be enhanced with input from geriatricians and other relevant specialists.

Admittedly, the CH cannot and should not be expected to provide the level of care available in the acute hospitals, at least where diagnosis and management of active medical problems are concerned. Some have expressed fear that subacute care in CHs can cloud the distinction between acute and step-down hospitals. Others fear that sub-optimal subacute care may lead to poorly managed medical problems which subsequently present late to the acute hospitals. Such concerns are valid but it would take the implementation of subacute care to verify their truth and uncover yet unseen ones. Studies have been done to examine the outcomes of subacute care or intermediate care[7-9]. The question of whether subacute care in CHs can reduce readmission to acute hospitals is worthy of a research study. In our country, CH based subacute care is still in its infancy. As in any medical set-up, health providers will learn through the experience gained with implementation.

CONCLUSION

Premature discharge in the CH is an important problem that merits effective remedy. The greater part of the problem lies in inappropriate admissions from acute hospitals in the form of unstable patients or patients with unresolved medical problems. Hence, the solution entails stricter enforcement of existing guidelines on admission criteria of patients into CHs[5] and increased vigilance on the part of the acute hospitals. In addition, the provision of subacute care by CHs may decrease patient transfers to the acute hospitals for management of certain medical problems. These measures would hopefully minimise disruptions to the rehabilitation of patients and improve overall quality of care. After all, intermediate care is intended to reduce avoidable hospital admission or readmission and to improve transition from hospital to home.

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