Case management for at-risk elderly patients: a review

REVIEW ARTICLE

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ABSTRACT

In Hong Kong, elderly patients recently discharged from hospital are at high risk of unplanned readmission, leading to the phenomenon of the 'revolving door syndrome'. A review of the literature and also studies conducted locally suggest that a case management approach could be a useful tool to achieve a more coordinated and better continuum of care for this group of patients. The case management tool could also contribute to a more integrated care system for the frail elderly, due to pooling of expertise and resources from the health and long-term care sectors. More studies should be encouraged locally to explore a broader application of this approach as a means of improving elderly care for the rapidly ageing population of Hong Kong.

Key words: Case management; Continuity of patient care; Frail elderly; Health services for the aged; Home care services

INTRODUCTION

The term 'revolving door syndrome' was coined by Gordon[1] in 1995 to describe the problem of frequent return of old aged home residents to hospital shortly after discharge. Subsequently, it was observed that frail older persons are particularly at risk ending up in the gap between health care/hospital and supportive social/community care service systems and thus they become victimised even further.[2] In this group of patients repeated admissions consume huge resources and block beds in the acute hospitals,[3] and is a particularly serious problem in Hong Kong. By contrast, the United Kingdom has a more hospital-based health care service delivery system. In 1993, a local survey of older medical patients discharged from a regional hospital showed that the readmission rate was 11% at 1 month and 30% by 6 months.[4] A large-scale cohort study by Kwok et al[5] in 1999 found that out of 1204 consecutive hospital medical patients aged 70 years and above, 38% had at least one readmission in 6 months and 18% were readmitted within 28 days. Even the Elderly Commission, the highest official body to advise the Hong Kong SAR Government on policies and services for the older persons, acknowledged this unsatisfactory situation secondary to the poor interface between the health and long-term care system in Hong Kong. "As most frail elderly people in need of long-term care (LTC) are almost inevitably suffering from chronic illnesses, they are also in need of medical care. They are often patients of specialist out-patient clinics of the Hospital Authority (HA) and other public or private sector medical services. In fact, experience worldwide has demonstrated that if inadequate medical support is given to the LTC system, or if the quality of service is unsatisfactory, many of the corresponding elderly become frequent users of acute medical services, i.e. the so-called 'revolving door syndrome'. The latter phenomenon therefore accounts for a large number of readmissions to hospitals and high occupancy of medical and geriatric wards. Other than having an adverse impact on the health of the elderly, this syndrome poses a heavy burden on the medical sector."[6] The HA is also acutely aware of the impact of this syndrome to the workload in public hospitals and the consumption of the limited health care resources. Upon re-organisation of the public hospitals under HA into seven clusters, statistics for unplanned readmission (within 28 days of discharge)

to acute hospitals were closely monitored and programmes launched to redress this problem have met with varying degrees of success.[7-10]

The Haven of Hope Hospital is a rehabilitation hospital under the HA in Tseung Kwan O, Sai Kung. In collaboration with the community-based elderly care units of its parent organisation—the Haven of Hope Christian Service, it has piloted a case management approach to achieve a better integration and continuum of care for at-risk elderly patients discharged back into the local community from hospital.[11] This paper attempts to summarise the experience and lessons learnt and review the literature on case management for post-discharge care.

OVERSEAS EXPERIENCE OF CASE MANAGEMENT

The value of case management, comprehensive discharge planning, and home follow-up services for older persons during transitional care have been studied in various countries.[12] Earlier studies mainly in the United States were not encouraging and pilot programmes were either not sustainable or failed to impact the organisation of the care delivery system.[13,14] However, more recent studies, including fairly large randomised controlled trials, hold out much more promise.[15,16] The widely quoted study from Philadelphia by Naylor et al[16] used advanced practice nurses as case managers who coordinated discharge planning, care coordination, and follow-up. Compared to controls, elderly patients in the intervention group had a lower readmission rate up to 24 weeks post-discharge, fewer multiple readmissions and there were significant health care cost savings in terms of Medicare reimbursements. A fairly large randomised controlled trial from Australia involved 311 elderly patients in the intervention group and 287 controls; its intervention entailed post-acute care coordinators with allied health or nursing background as case managers.[17] The latter coordinated discharge planning and provided short-term intensive case management to support the discharged elderly patients and their family care-givers. Such support included a budget to purchase both community-based therapeutic (e.g. physiotherapy) and supportive services (e.g. personal care and meals on wheels) in the immediate post-discharge period. This intervention resulted in a significant reduction in hospital utilisation and health care costs up to the sixth-month post-discharge.

Substitution of expensive in-patient services secondary to unplanned readmission by community nursing and home personal care seems to be a rational and sensible choice. Well-coordinated home care team support for discharged elderly patients has been shown to prevent readmission, reduce the use of institutional care, and increase the time that disabled elderly people spend at home.[18] A meta-analysis study on home care in 1997 showed a small-to-moderate positive impact in reducing hospital days, ranging from 2.5 to 6 days.[19]

Upon discharge of frail older persons from hospital, few will argue against the importance of service continuity and coordination/linkage between hospital and community-based/home care. Case management intervention targeted to this group of the at-risk population has been suggested to be a cost-effective approach in transitional care.[20] There are, however, many challenges in the proper design and implementation case management and local data from randomised controlled trials and cost-benefit analysis are lacking.

Case management for hospital-discharged patients can include both short- and long-term components. Short-term case management is used to facilitate transition of patients from hospitalisation. Following discharge, patient care is usually managed by nursing and social work staff, typically for 1 to 3 months. In longer-term case management, case managers continue to assist the disabled and frail older persons for extended periods, often for 2 years or more. The case managers have the dual role of patient advocacy and resource control.[14] Case management performs the important 'bridging' function between acute hospital care and chronic health and social services received in the community setting. Usually both nursing and social work skills are required of case managers, who help to ensure that patient care needs are met during this crucial post-discharge period.[21]

CASE MANAGEMENT IN IMPROVING TRANSITIONAL CARE IN HONG KONG

In Hong Kong there are few examples of local study of case management in health care. The best

known is probably the case management study in community nursing commissioned by the HA.[22,23] There are indications that the case-management model could promote a seamless, integrated transition and ensures continuity of care but more coordinated effort together with in-depth research and evaluation are required.[24]

From June 2000 onwards, staff in Haven of Hope Hospital and the Haven of Hope Christian Service have tried to apply case management to achieve a more integrated and coordinated care for at-risk elderly patients discharged from the hospital. The Chinese Minimum Data Set–Home Care (MDS-HC) was used as the standardised assessment tool to categorise the level of impairment of the older persons and link the appropriate services according to their holistic need.[25] A pilot 6-month randomised controlled trial study in 260 hospital-discharged patients aged 60 years and over showed reduction in hospital bed-days occupied and saving in health care costs in the intervention group.[26] The pilot study also revealed that:

(1) Older persons with different levels of health and functional impairment require different levels of intensity in the case management intervention. In general, patients with a mild-to-moderate level of impairment, who are socially at risk (e.g. if they live alone), could be adequately served by trained medical social worker case managers, but frail ones with moderate-to-severe levels of impairment are better served by community nurse case managers supported by the medical social workers and specialist geriatrician.
(2) Psychosocial support and empowerment of older persons and their informal caregivers are important elements in case management interventions that enhance tolerance and coping capacity at home.
(3) The interdisciplinary case management team should be stable and use integrated computing databases; support from informal caregivers and facilitation of intersectoral collaboration of health and social service units need to be under one administrative umbrella.

These caveats are in line with the key issues identified in the evaluation of care management programmes in the United Kingdom by Challis et al,[27] who concluded that integration of health care and social service provision on the basis of differentiated care management offers more fruitful outcomes. A further follow-up study from the Haven of Hope Group entailed a 12-month targeted care management project directed at a high-risk population by experienced community nurses.[28] In this project, hospital-discharged frail elderly patients with a history of ≥2 hospital admissions in the preceding 6 months and multiple chronic medical conditions derived benefit from intensive case management. Compared to the controls (n=47), the intervention group (n=45) enjoyed a significant reduction in the number of hospital readmissions and hospital bed-days occupied that resulted in health care cost savings. Specialist geriatricians and an interdisciplinary team provided close support to the nurse case managers. In additional to making home visits and telephone monitoring of patients, the nurses were also available (8:00 am to 9:00 pm except on Sundays and public holidays) for mobile-phone advice/assistance to patients and their informal caregivers. By providing timely, appropriate, and individualised support, the nurse case managers successfully prevented disease complications or facilitated early treatment, and substituting more cost-efficient alternatives such as community nursing services for hospital readmission.[28] A qualitative study and satisfaction survey further revealed that both the patients and their caregivers experienced high levels of satisfaction with the nurse case managers and the services provided.[29] The perceived benefits included (1) continuity of care by the same person, (2) easy access, (3) coordinated care, (4) relief of emotional stress, (5) improvement of health status, and (6) decreased need for hospitalisation.

For older persons who are mainly socially at risk upon discharge from hospital, short-term case management follow-up services by the case medical social worker serving them in the in-patient units may be the most natural, convenient, and cost-effective model. This approach with the emphasis on patients and informal carers empowerment has also been tested by the Haven of Hope Group in a pilot study, which showed encouraging results with significant improvement in the patients' psychosocial status and reduced hospital utilisation.[30]

THE IMPLICATION OF THE STUDIES AND APPLICATION IN HONG KONG

Case management is a promising tool for achieving

continuity and integration of care for at-risk elderly patients in transition from hospital to the community. Its application in pilot studies in Hong Kong to bridge the gap between the health care and social-service system was found to be encouraging. However, case management alone without system integration and eventually a mechanism to enable pooling of health and social care budgets may not have a significant impact in the presence of a fragmented care system for the older persons. In the advancement of the care for our ageing Hong Kong population, this is the major challenge for all parties, from policy makers to front-line workers.

Under the HA, the public hospital system in Hong Kong has been reorganised into seven clusters. A population-based funding model is now used for resource allocation to clusters. This should encourage further expansion of outreach community geriatric services such as Geriatric Day Hospital, Community Nursing Service, Community Geriatric Assessment Team (CGAT), Community Psychogeriatric Team (CPGT), and Community Rehabilitation Services. Last year, management of General Out-Patient Clinics were also transferred to the HA from the Department of Health. Dr William Ho, former Chief Executive of HA, has openly announced his vision to shift the setting of care into the community and, except for its name, the term HA will not be confined to hospitals. "The number of beds should decrease. Patients will gradually identify themselves with the care network in the community, where most of their problems are solved. This, I would say, is the mature state of cluster management."[31] The social services delivery system funded and overseen by the Social Welfare Department (SWD) in Hong Kong has also recently been reviewed and re-organised into 13 districts. A lump-sum grant-funding model has been agreed and successfully implemented for resource allocation from SWD to non-government organisations. The latter are the major operators of community-based and residential care services for older persons in Hong Kong. Upon the recommendation from two consultancy studies/reviews,[32,33] the social service delivery system for older persons has shifted its emphasis to home care and supporting services and district based coordination through the District Elderly Community Centres. Traditional home help services have been re-organised and strengthened with the introduction of more basic nursing and rehabilitation elements to form the Enhanced Home and Community Care Services and Home Care Teams. Some of these teams have cooperated closely with the HA medical and geriatric units, e.g. through the purchase of CGAT, CPGT, and rehabilitation therapy services.

These recent developments in the health and social service system in Hong Kong, indicate that now is the opportune time to re-design a better and more integrated care model for at-risk elderly patients discharged from hospitals. Such changes could facilitate prevention of unnecessary hospital readmissions and make better use of the health care and social service budgets. In fact, in the final report of the consultancy review of day care and community services for the older persons commissioned by the Hong Kong SAR Government (published in the year 2000),[33] a full chapter was devoted to the topic of improving such health and welfare interfaces. The consultants commented that this is one of the most critical factors affecting the success of "care in the community" and "ageing in place"—the two pivotal policies for care of the aged in Hong Kong.[33] Case management, either short-term continuing follow-up and service coordination by the case medical social workers or longer-term and more intensive support from community nurses supported by specialist geriatricians could be used as the linchpin for an integrated and continuing care model.[14,28,30]

There are two examples of truly integrated care models using case management for older persons that have been studied in more depth and could serve as our references to develop a more cost-effective and integrated care models in Hong Kong. These are: (1) the integrated social and medical care model for frail elderly people living in the community developed by Bernabei's group in Italy, and (2) the Programme of All-Inclusive Care for the Elderly (PACE) developed by the On-Lok Elderly Services in the United States.[34-37]

The Italian model used generic case managers trained in geriatric assessment and case management working in close collaboration with an interdisciplinary team in the geriatric evaluation unit and with family physicians. It was an integrated community based social and medical care programme using the MDS-HC as the comprehensive care needs assessment tool and the case managers as the operational arm of the programme team. This

gave frail older persons easy access to someone, i.e. the case manager who knew their care problems and provided the link to their physician and other health and personal care facilities as appropriate. The programme was evaluated after 1 year, and compared to controls, the intervention group had enjoyed a significant reduction in hospitalisations and savings in total care cost.[34,38] A special emphasis was made by the authors who emphasised the importance of training for the case managers, which needed to be focused on comprehensive geriatric assessment skills and clinical care planning, as well as the ability to coordinate available health and social services agencies to provide integrated care.[39,40]

The PACE model in the United States is a prepaid, capitated managed care programme in support of comprehensive primary, long-term, and acute care, delivered by not-for-profit or public providers.[41] It aimed to enable frail, disabled elderly patients to be cared for in the community setting for as long and appropriate as possible. This innovation was first developed as a demonstration project by the On-Lok Senior Service in San Francisco to address the geriatric long-term care needs in Chinatown.[42,43] It has now been replicated in 25 demonstration sites in many states of America and is eligible for permanent status federal and state government funding.[43] PACE is an innovative model of comprehensive long-term medical and social services and has a strong motivation to preserve and support the older person's family unit.[37] The model has the following major characteristics:

(1) It targets frail older persons residing in defined geographic areas.
(2) It offers comprehensive and integrated care through an inter-disciplinary team and intensive case management.
(3) Providers bear the financial risks, which involves financial integration of the health care (Medicare) and long-term care (Medicaid) budgets plus private funds into a single capitation pool.
(4) It encourages flexibility and creativity in service arrangement with financial incentives to implement aggressive preventive health practices and maintain the independence of the older persons.
(5) The major thrust of service provision aims to prevent acute illnesses and functional impairment and preference for community as opposed to hospital acute care or nursing home placements.[44]

At the core of PACE services is the interdisciplinary team, consisting of professionals and paraprofessional staff. Each PACE team includes a primary case physician, nurses, social workers, a physical therapist, an occupational therapist, an activity coordinator, a dietician, a day-care centre supervisor, home-care nurses, health workers, or personal care aides and a network of transport staff.[41] Case management is provided and supported by the interdisciplinary team which meets once or twice a week with the social workers; the home case nurse managers usually act as the liaison persons with the older persons and their family caregivers.[36,37]

Average PACE enrolees have a degree of frailty similar to nursing home residents.[37] Their mean age is 80 years and on average they have 8.1 medical diagnoses. Over half are incontinent and dependent in 2.9 activities of daily living. More than two thirds suffer from mental disorders, including dementia and depression. The comprehensive array of services they need are provided through an individual service plan devised by the interdisciplinary team and carefully coordinated and managed by the case managers/team. Such services include primary medical care, day health centre attendance and rehabilitation, allied health and diagnostic services, integrated home care from skilled nursing to personal care and meal delivery as well as in-patient care in acute hospitals and nursing homes.[37,43] A major cost-effectiveness and service quality review demonstrated reduced hospitalisation among PACE participants compared to the general Medicare population, despite their greater morbidity and disability level.[45] Williamson[46] wrote an editorial on the achievements of PACE in the *Journal of the American Geriatrics Society* in November 2000. He concluded that the data that demonstrated community-based care coordination for frail older persons utilising the oversight of clinicians with expertise in geriatrics and gerontology is able to reduce hospitalisation. He regarded this to be a major milestone for geriatric evaluation and management, which could become the cornerstone of future geriatric medicine. He also opined that the heart of the successful formula of integrated care in PACE lies in its flexibility to use combinations of existing financial, family, community, and clinical resources creatively, so as to manage chronic illnesses rather than to manage them under the guise of an acute illness, as is so often the case in traditional Medicare. Actually, from a health care expenses

perspective, the National PACE Association reported an overall 12% reduction in Medicare (acute health care) expenditures and based on the San Francisco PACE experience there were 5 to 15% Medicaid (long-term care) savings.[43] Studies have also shown a very high degree of satisfaction from the PACE participants and their informal caregivers.[44,47,48]

Case or care management has also been developed in the United Kingdom over the past decade in the search for more coordinated care for the older persons and linking the health and social service system. Evaluation of pilot programmes showed varying degree of success. The important lessons learnt were the requirement to: (1) differentiate the level of case management response according to need, (2) target appropriately, (3) devolve of budgets, (4) ensure continuity of case manager with service user involvement, and (5) provide appropriate links with specialist health care expertise.[49] It was found that while the care of all older people should be managed appropriately and effectively, the most vulnerable elderly often require fuller assessment and more intensive forms of care management (DOH, 2001 para. 239).[49] Improvement in the assessment tools for frail older persons and flexibility in the intensity of care management according to need are important issues. In linking health care and social services, it was opined that integration of care provision on the basis of differentiated care management offers more possibilities and is fully consistent with recent policy initiatives to develop partnerships between health and social care by enabling mechanisms such as pooled budgets (DOH, 1998).[50]

CONCLUSION

With the population ageing and especially the rapid rise in the 'old-old' segment expected in the next few decades, health and social policy issues related to the care of older persons are posing an urgent challenge in most developed countries, including Hong Kong. Medical services appear to have made great progress in warding of disease, but frailty is often the price of longevity. The majority of frail older persons are in need of integrated and continuing medical and social supporting services, but the present system is far from satisfactory.

Case management is a useful tool to achieve service coordination and integration. However, for a sustainable impact on the total care system, organisational and structural changes involving more integrated care delivery and funding are necessary.

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