Review Article

Transitional Care of Older Adults from Hospital to Home

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Abstract

Older adults often have reduced body reserve, multiple illnesses of many organ systems, and receive polypharmacy thus requiring complex medical care. Older adults have the opportunity to be cared for in different settings leading to changes in all dimensions of care. This creates a chance for medical mistakes and affects the safety of older adults that come with each transition of care. Transitional care is especially important in older adults. Fast and important information transfer between care teams who provide information to patients and caregivers in a language that is easy to understand is vital. Involving patients in the decision-making review of medication use and follow-up after the patient leaves the hospital contributes to reducing the chance of hospital re-admission of the patient. This requires cooperation from a multidisciplinary team. Effective transitional care improves the quality of life and reduces the cost of treating older adults.

Objectives: This review aimed to indicate the importance of effective transitional care. The review consisted of examples of transitional care models and components of each model. Also, specialized care in disease specific patients were mentioned.

Keywords: transitional care, hospital discharge, discharge planning, older adults

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Introduction

Older adults are different from other ages because they have complex health conditions. There are multiple illnesses of many organ systems and many chronic diseases thus requiring complex medical care. During hospitalization, older adults tend to limit their activities, leading to functional decline. Older adults often develop complications such as infection, immobilization syndromes (e.g., pressure ulcers, joint stiffness and orthostatic hypotension), or confusion. After hospitalization, older adults may require various forms of medical support (e.g., feeding, monitoring symptoms and preparing medication) including social support to meet their needs.[1], Nevertheless, older adults have the opportunity to be cared for in different settings, such as hospitals, homes, or long-term care facilities. Thus, each change of location presents a challenge. It is not just a physical change but also changes in all dimensions of care for the elderly - new caregivers, medicines and goals of care. This creates a chance for medical mistakes and affects the safety of older adults that comes with each transition.

Unplanned transitions are a common problem leading to rehospitalization and increased cost of elderly care.[2] Adverse events may occur after discharge of the patient caused by the transmission of incomplete or erroneous information, such as treatment or diagnosis data. However, the most common and severe problems are medication-related problems. In addition, cognitive impairment among the elderly may affect communication or memory of self-care information. This may also relate to a lack of available caregivers to care for the elderly who are functionally or cognitively impaired. After discharge from a hospital, approximately 20 percent of older adults will be rehospitalized within 30 days and one-third of patients are rehospitalized within 90 days.[3] In one study, those with early rehospitalization had 3 times higher one-year mortality than those without early rehospitalization.[4] Most patient adverse events during transition of care relate to problems with medication. With each admission and discharge from the hospital, the risk of medical error increases. One study found that more than half of the patients experienced at least one accidental medication error after hospital discharge[5] and approximately 20% of patients experienced an adverse event within 1 month after discharge from the hospital.[6] Also, more than two-thirds of these events were medication-related, which could be prevented. Importantly, those who did not come for laboratory tests after discharge from the hospital as scheduled were 6 times more likely to be hospitalized again compared to the group without the aforementioned mistakes.[7] Overall, there are six categories of issues which can result in negative outcomes in patients while in hospital and post-discharge at home. The issues can be grouped as follows: limited patient involvement regarding their own care, inadequate communication, little cooperation between the medical team, difficulties associated with follow-up and patient monitoring, insufficient continuity of care and a disparity in the services provided to patients after being discharged.[8]

The following review aimed to describe the importance of transitional care. The review consisted of examples of transitional care models and components of each model. This will show the significance of the multidisciplinary team in taking care of high-risk patients. Poor transitional care may lead to increased healthcare problems, including seeing a doctor at an outpatient clinic or visiting the emergency department and hospitalization.[9]

Benefits of effective transitional care

A systematic review[10] consisting of 23 studies with a total of 20,997 participants, median age 76 years, found that transitional care significantly reduced hospital readmission rates at 30 days (odds ratio [OR] 0.75, 95% confidence interval 0.62 to 0.91, $p < 0.01$). In addition, transitional care may increase the use of primary care services, which has a good effect on preventive care.

Effective transitional care has many benefits.[11] It can reduce the length of hospital stay (mean difference length of stay -0.91, 95% confidence interval -1.55 to -0.27),[12] reduce the risk of readmission to hospital (relative risk 0.82, 95% confidence interval 0.73 to 0.92),[12] reduce long-term visits to aged care facilities (odds ratio of effective number of subjects living at home at 6-12 months was 1.44, 95% confidence interval 1.07 to 1.95),[13] improve health and enhanced quality of life,[14] and improve the care experience for patients and caregivers.[15]

Transitional care model

There are many transitional care models that have been shown to be effective as demonstrated in Table 1. Although the target population was different, most of the models showed similarity

in core components. The core components consist of screening high risk patients (e.g., older adult, multiple comorbidities, heart failure and cerebrovascular disease), assessment (e.g., function, cognition, home environment and social support), multidisciplinary plan of care (including goals of care), medication management, discharge planning, personal health records and discharge summary, patient or caregiver education and close follow-up.

1. Care Transitions Intervention (CTI)[16-17] is a model of care developed in 2003 and is in use at numerous hospitals. This model was initially studied in older adults undergoing treatment for cerebrovascular disease and chronic disease, however it more widely used nowadays. The aim of CTI is to involve patients and caregivers in self-care and self-management after hospitalization. This model is based on 4 fundamental principles: (1) medication self-management; (2) utilizing updated and dynamic personal health records to ensure ease of communication and continuity of care plan across providers and settings; (3) primary care and specialist follow-up (4) awareness of red flags and how to respond when symptoms worsen. An advanced practice nurse, who doubles as a transition coach, makes home visits and phone calls to check patient involvement and self-management in chronic disease care. This model of care has undergone studies in several clinical settings and uncovered a statistically significant reduction in re-admission to the hospital at 30 days, along with an increased quality of life and the ability of the patient to take care of themselves more.

2. The Transitional Care Model (TCM)[18] is a widely recognized model of transitional care developed at the University of Pennsylvania, which screens people who are at high risk of poor outcomes during the transition from hospital to home. It has also been effective in managing older adults with congestive heart failure and myocardial infarction.[2] The transitional care nurse will develop a discharge plan based on needs, considering specific goals and preferences. Emphasis is placed on information sharing with the patient being followed up from the hospital to home. This will then prepare both patients and families to manage health conditions of the patient at home. Communication is an integral part of this process, including with physicians at outpatient clinics, home visits and follow-up telephone calls after hospital discharge. TCM emphasizes a multidisciplinary approach to patients led by transitional care nurses who remain in contact with a variety of service providers.

3. Coordinated-Transitional Care (C-TraC)[19] is an emerging model of transitional care using similar procedures to CTI and TCM done among veterans but has also targeted high-risk patients, especially those who are cognitively impaired, patients who refuse home visits or are too far away for a home visit. The telephone method was used by the nurse case manager to coordinate the patient's transitional care by follow-up phone calls after leaving the hospital and working with patient care teams both in-hospital and post-hospital. The goals of care are (1) educating and reassuring veterans and their caregivers on medication management, (2) ensuring follow-up appointments are available and will be available for check-ups, (3) educating them about symptoms, (4) providing monitoring and contact information upon leaving the hospital. The results of the care were found to reduce readmission to hospital by one-third of patients.

4. Reengineered Discharge (RED)[20] was studied in general internal medicine patients and focuses on a multidisciplinary approach to patient care. The nurse engages patients during their hospitalization, arranges individualized clinical information and post-hospital treatment plan after leaving the hospital. The pharmacist will conduct follow-up calls 2 to 4 days after discharge from the hospital, reviewing medications and communicating directly with the physician at the outpatient clinic. This project reduced hospital visits by about 30 percent, including emergency room visits and re-hospitalization within 30 days.

5. The Better Outcomes for Older Adults Through Safe Transitions (BOOST)[21] program is a collaborative model of transitional care to improve quality across healthcare facilities around the United States. This program focused on internal medicine and general surgery patients. Specialists will improve the quality of transitional care based on the context of each hospital. The project involves several methods: risk assessment, review of drug use, discharge checklist and a multidisciplinary approach to the distribution process. The study found that the rate of rehospitalization decreased.

6. The Transsectoral Intervention Program for Improvement of Geriatric Care in Regensburg (TIGER)[22] was a study of the transitional care model from hospital to home for people aged 75 years

and older. This program consists of individualized care plans based on patient symptoms, risks, needs and values. There are home visits and phone calls. Necessary care is included such as adjusting housing or nutrition. Outpatient services, patients and caregivers will be involved in the care plan. The study's outcome was the rate of readmission to the hospital within 12 months. The results of the study are pending.

Table 1 Review of transitional care models

Model	Population	Contents	Health care providers	Methods
Care Transitions Intervention (CTI)	Older adults with cerebrovascular disease and chronic disease	- Medication management - Personal health records - Close follow-up with physician - Knowledge of red-flag signs	Transition coach who is advanced practice nurse	Personal health record home visits and phone call
Transitional Care Model (TCM)	High risk patients (aged ≥80, low self-care, depression, cognitive impairment, ≥4 underlying diseases, ≥6 medications, re-admission	- Provide care focused on discharge planning and home follow-up - Discharge plan based on needs, goals and preferences - To ensure information is shared and to prepare patients and families to manage their health conditions	Transitional care nurses who contact with doctors, nurses, social workers, discharge planners and pharmacists	Communicating with physicians at outpatient clinics, home visits and follow-up phone calls
Coordinated-Transitional Care (C-TraC)	Veterans with targeted high-risk patients, who are cognitively impaired, refuse home visits or are too far away for a home visit	- Educating and reassuring patients and caregivers on medication - Ensuring follow-up appointments - Educating about symptoms - Providing monitoring information and contact information	Nurse case manager	Follow-up phone calls
Reengineered Discharge (RED)	General internal medicine patients	- Engaging with patients during hospitalization, clinical information and discharge plan - Medication review - Communicating with physician at outpatient clinic	Nurses, pharmacist	Follow-up phone calls
Better Outcomes for Older Adults Through Safe Transitions (BOOST)	Internal medicine and general surgery patients	Based on the context of each hospital	Specialists	- Risk assessment - Medication review - Discharge checklist - Multidisciplinary approach
Transsectoral Intervention Program for Improvement of Geriatric Care in Regensburg (TIGER)	People aged 75 years and older	- Individualized care plans - Necessary care (adjust housing and nutrition) - Outpatient services		Home visits and phone calls

Core components of effective transitional care

Transitional care is care that begins before discharge and continues until the patient leaves the hospital. The goal is to ensure a safe and efficient patient transition e.g., from hospital to home. Transitional care is divided into: pre-discharge and post-discharge care. Pre-discharge care includes: assessing the risk of adverse events or re-hospitalization, patient involvement, such as patient or caregiver knowledge, creating individual patient records (a document that records clinical information at a level that the patient can understand and use after leaving the hospital), involving the multidisciplinary discharge planning team and dedicated transition service specialists (who had contact with patients both before and after discharge) when patients were ready to be discharged. The post-discharge care includes patient access (including follow-up by phone hotline accessible to patients and home visits), the convenience of clinical follow-up (including follow-up at outpatient clinics), and review of discharge medications.

Effective transitional care depends on many factors such as:[17,18,20] (1) the communication process between the discharge team and the continuing care team (e.g., identifying and arranging post-hospital needs, summary discharge form of information to physicians who continue to care for patients, physician appointments and access to public health services), (2) providing education to patients and caregivers about diagnosis and treatment plans since being in the hospital and upon leaving the hospital, as well as how to notice worsening symptoms and what to do, (3) participation of patients and caregivers in decisions about expectations of care at different stages, make comments and decisions about treatment goals, (4) effective medication reviews are used to identify and correct medication errors, such as medication changes, repetition, frequency, or method of administration to prevent adverse drug events and later endangering the patient. The medication review should begin with the patient's medication history. This must include all medications the patient is currently taking both prescription medications, over-the-counter medications, herbs and supplements. History of drug allergies and side effects, including adherence to medication use should be reviewed. A medication review should consist of five steps: a current list of medications, a list of newly prescribed medications, comparison between both lists, comparison and decision on medication, and notifying caregivers and patients about the new medication list, and (5) contacts with the patient at home, such as a home visit by a nurse, a follow-up phone call, or a medication inquiry by a pharmacist.

The discharge summary should be brief short and to the point, especially for patients with complex care, so that continuing care personnel can easily draw out key points and recommendations. The most important points to be included are the principal diagnosis, physical examination, laboratory results, medication received at the time of discharge and the follow-up appointment.[23] Accurate discharge summaries improve the follow -up of results of tests pending at discharge.[24] Continuing care personnel should identify changes made and audit the results. Advice is also received by patients and caregivers. As a consequence, poor quality discharge summaries increase the risk of medical errors, including medication errors and delays in outpatient reviews.[25-26]

The follow up time is important. All older adult patients should make a follow-up appointment within 2 weeks of discharge.[27] Follow-up appointments should be planned before the patient leaves the hospital and the follow-up time should depend on the severity of the patient's medical problems and the risk of their condition worsening. High-risk patients should make an appointment within a few days of leaving the hospital and low-risk patients can make a follow-up appointment within 2 weeks

Discussion

Improving the transitional care process is aimed at reducing rehospitalization and adverse events. There are many transitional care programs that have shown benefit. Most of the models mainly consist of a transitional care nurse and multidisciplinary team. The components consist of screening, collaborating, promoting continuity, staffing, engaging patients and caregivers, assessing and managing risks and symptoms, and educating self-management.

Although many transitional care models have shown clinical benefits, this intervention requires resources such as multidisciplinary teams and added time. Models based on the context of

hospitals might be used for selected high-risk patients to garner more attention to meet their needs.

For specific conditions, such as people with cognitive impairment or heart failure, specialized transitional care may be needed. Cognitively impaired people are at increased risk of having poor outcomes during the transition. Studies suggest that dementia may increase the risk of hospitalization by 40%.[28] People with dementia have limited abilities to learn, remember and communicate, which are components of effective caring. This can result in inability to communicate well and affect rehospitalization. Those with dementia may have greater transition within the last three months of life than those without dementia.[29] People with dementia may be excluded from participating in decisions about transitional care. This is due to the misconception that people with dementia are unable to make decisions. People with dementia benefit the most from empowerment-focused care, preparing caregivers and adjusting patient care methods to meet individual needs. The C-TraC model of care is one method that engages caregivers and uses a way to monitor patients with dementia. Elderly people with dementia who live in the community are often cared for by family caregivers. Caregivers of people with dementia are burdened, which can have a negative impact on patient health outcomes. Transitional care should therefore be responsive to the needs of families and carers. Supporting and mentoring caregivers can be helpful both in the short and long term.

In patients with heart failure, this condition impairs the patient's ability to support themselves. There are times of periodic exacerbations of the disease, resulting in re-admission to the hospital including visits to the emergency department. Most of the patients with heart failure were discharged from the hospital without adequate self-care instructions, risk assessment, education and advice, food and water intake, medication management, activities and daily body weight monitoring. Telephone follow-up home visit and rehabilitation can assist with this.[30]

Thailand has a health service system that covers home care at the community level. This home care is coordinated by health volunteers and primary care medical personnel, who can assist patients with daily activities, medication management and rehabilitation. Also, they provide home visits to people who need ongoing care. However, one of the problems of caring for patients after leaving the hospital is the lack of systematic transfer of patient information from the hospital to the community. Most of the information during hospital stays is limited to use in the hospital. There is no systematic data transfer to primary care medical personnel, resulting in inadequate continuity of care and insufficient rehabilitation. Solving this issue might need a change in policy as it involves multiple ministries and needs cooperation. The transmission of information of a personal health record must be able to be accessed by all relevant personnel. Otherwise, establishing a central coordination center for transitional care between organizations could be a practical solution, especially in the context of developing countries.

Conclusion

Transitional care is an intervention that has been shown to decrease hospital re-admission rates and adverse events post hospital discharge. It is managed by a multidisciplinary team. The model aims to transfer important information between care teams to patients and caregivers in a language that is easy to understand. Involving patients in decision-making, review of medication uses and follow-up after discharge, all contribute to reducing the chance of re-admission to the hospital. Effective transitional care improves the quality of life and reduces the cost of treating the elderly. Patient-centered approach should be emphasized in all high-risk patients.

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