

A Health Insurance System for Maintaining or Improving Activities of Daily Living in Acute Wards in Japan

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Abstract

Inpatients' physical activity is commonly restricted because of treatment, leading to declines in Activities of Daily Living (ADLs) and prolonged hospital stay. In 2014, an additional health insurance system for maintaining or improving ADLs ("ADL ijkoujoto-taiseikasan" in Japanese) was newly established by the Japanese government. The fundamental policies for this system are as follows: (1) preventing functional declines of ADLs during hospitalization and facilitating early discharge and (2) enhancing multidisciplinary approaches and safety management, preventing disuse syndrome and pressure sores, and sharing information with patients and their families. To date, two studies have reported that immediate intervention by assigned physical and/or occupational therapists in acute wards under this health insurance system effectively prevents declines in ADLs and reduces hospital stay.

Keywords: Activities of daily living; Physical activity; Elderly patient

Introduction

The Japanese society is rapidly aging. When elderly patients are admitted to an acute care hospital, their physical activities are often restricted because of treatment. Accordingly, their physical function and Activities of Daily Living (ADLs) decrease and the length of hospital stay tends to be protracted. Decreasing hospital stay has been one of the primary objectives of the Ministry of Health, Labour and Welfare's plan for reducing healthcare costs by ensuring the appropriate and efficient provision of medical services [1,2]. It is essential to prevent declines in ADLs through rehabilitation interventions in the early phase of hospitalization.

Importance of Early Mobilization

Early mobilization, which has been recognized as a primary component of acute-phase rehabilitation interventions, is associated with better outcomes. One randomized trial of mechanically ventilated patients reported an association between early mobilization and better outcomes, including higher rates of discharge to home, fewer days in the intensive care unit, and less hospital-acquired comorbidity, such as ventilator-associated pneumonia and intensive care unit delirium [3]. Moreover, small randomized trials also have observed better physical functional status when patients who experienced a stroke are mobilized 24-48 h after hospitalization [4]. Another large-scale clinical registry reported the association of early mobilization with clinical outcomes in patients following heart failure. Early ambulation within 2 days of hospitalization is also associated with decreased length of hospital stay and post-discharge 30-days readmission rates [5].

Elderly patient populations such as those in Japan often have multiple comorbidities and physical frailty, which may contribute to longer hospital stay and lower rates of discharge to home. Iatrogenic sarcopenia caused by excessive bed rest is one of the major hospital-acquired comorbidities in the clinical setting, and it is considered preventable by early mobilization.

A New Health Insurance System to Maintain or Improve ADLs in Acute Wards in Japan

In April 2014, an additional health insurance system aiming to maintain or improve ADLs ("ADL ijkoujoto-taiseikasan" in Japanese) was newly established by the Japanese government. The main purpose of this new system is promoting early mobilization immediately after

admission in acute-phase wards to prevent functional declines because of disuse and enhance early discharge.

The main criteria for hospitals to participate in this health insurance system are as follows: (a) the percentage of patients with decreased ADLs as evaluated using the Barthel Index at discharge compared with that at admission should be less than 3% and (b) the proportion of patients with hospital-acquired pressure sores should be less than 1.5% [6]. The fundamental policies for this system are as follows: (1) preventing functional declines of ADLs during hospital stay and facilitating early discharge and (2) enhancing multidisciplinary approach and safety management, preventing disuse syndrome and pressure sores, and sharing information with patients and their families (Figure 1). The advantages of this system are both the early identification of patients requiring rehabilitation and early evaluation and intervention by full-time physical and/or occupational therapists assigned to an acute ward of the hospital at an early stage after admission, which is arguably effective, especially for reducing the length of hospital stay. Under this system, an assigned physical therapist in an acute ward performs rehabilitative interventions >30 min per day for up to 14 days after admission until discharge or before the start of a conventional individual rehabilitation program.

Thirty-two acute hospitals participated in the additional health insurance system in 2015. Since then, the number of the hospitals gradually to 66 hospitals in 2017, and it is expected to further increase in the future.

Impact of The Additional Health Insurance System

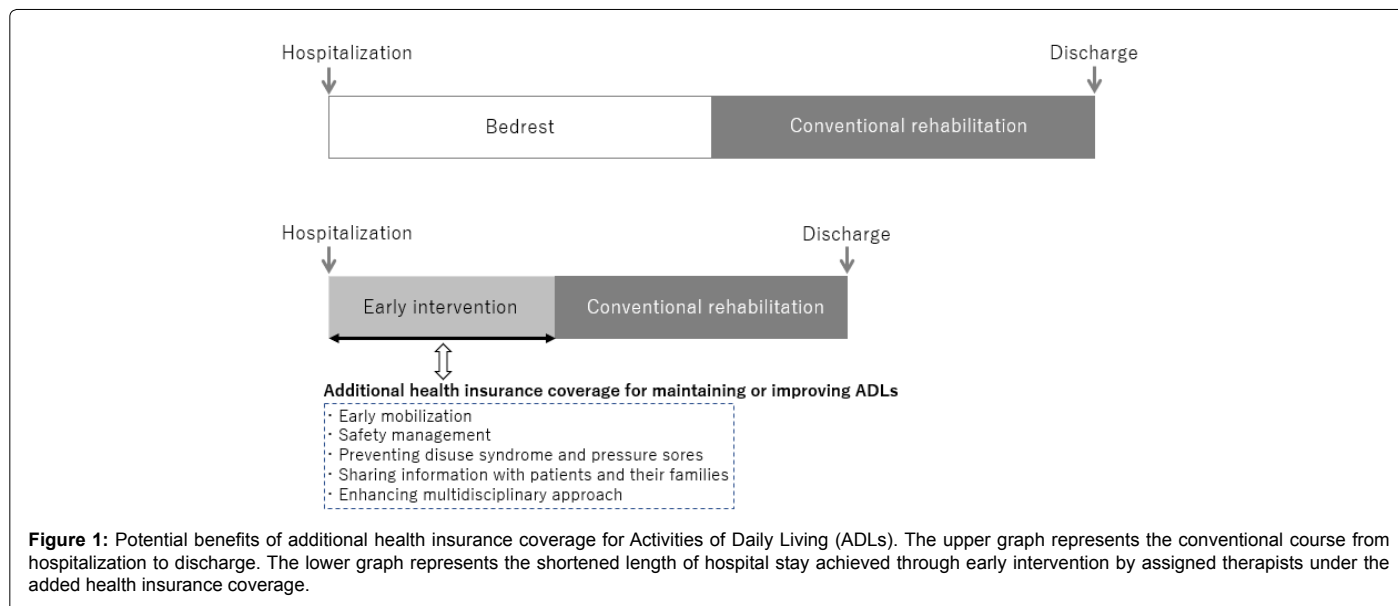
To date, two studies have investigated the effects of assigning

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| | Author (year) | ADL's group | Control group | P |
|--|-------------------|-------------|---------------|--------|
| Number of days before the initiation of rehabilitation | Kono et al. [8] | 3.7 ± 2.0 | 11.7 ± 6.9 | <0.001 |
| | Hirano et al. [7] | 5.0 ± 4.3 | 11.2 ± 14.5 | <0.01 |
| Length of hospital stay (days) | Kono et al. [8] | 26.1 ± 12.6 | 41.8 ± 17.1 | <0.001 |
| | Hirano et al. [7] | 28.6 ± 18.7 | 37.5 ± 27.3 | <0.05 |
| Duration of rehabilitation intervention (days) | Kono et al. [8] | 20.3 ± 10.4 | 25.0 ± 15.1 | <0.05 |
| | Hirano et al. [7] | 23.6 ± 16.2 | 25.3 ± 21.0 | n.s. |
| FIM score at discharge | Kono et al. [8] | 95.2 ± 2.0 | 93.1 ± 6.9 | n.s. |
| | Hirano et al. [7] | 96.0 ± 29.4 | 102.7 ± 25.1 | n.s. |

Note: n.s.- not significant

Table 1: Comparisons of patients covered under the additional insurance system and controls in prior studies.

physical and/or occupational therapists to a ward using the new additional health insurance system to maintain or improve ADLs. Hirano et al. [7] reported reductions in the number of days before the initiation of individual rehabilitation and the length of hospital stay in a respiratory medicine ward (Table 1). Our current study conducted in a cardiology ward [8] revealed that the number of days before the initiation of conventional individual rehabilitation program, duration of individual rehabilitation programs, and length of hospital stay were decreased after implementation of this new system, whereas the Functional Independence Measure (FIM) level at discharge was maintained, indicating that the preferred outcomes were attained with a shorter length of hospital stay. Our study corroborated the findings of the prior study by Hirano et al. [7]. The underlying factors of this desirable outcome may be attributed to the prevention of declines in ADLs at the initiation of rehabilitative interventions through assigning therapists to a ward and performing early mobilization.

In a conventional rehabilitation program, physical and/or occupational therapy interventions are provided if ordered by an attending physician or physiatrist. One feature of the new system is that direct preventive intervention by assigned therapists becomes available in the early stage of hospitalization. Decreases in the time before the initiation of conventional rehabilitation, duration of rehabilitation, and length of hospital stay were possibly attained by selecting patients with high risks of ADL declines by identifying the disease state and ADL levels of patients at an early stage after admission and connecting these patients to disease-specific rehabilitation programs immediately.

Taking together, the recent evidence leads us to conclude that immediate intervention by assigned physical and/or occupational therapists in acute wards under the new health insurance system effectively prevents declines of ADLs and reduces the length of hospital stay.

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