This comparative study investigated differences in functional capacity and functional gains of patients admitted for hospital rehabilitation between 2005 and 2011. Patients were grouped according to broad diagnostic categories: neurological, orthopedic, and deconditioned. Comparisons between functional capacity (Functional Independence Measure (FIM), gait speed) and functional gains were made on two 1-year patient cohorts for diagnostic groups. In 2011, more patients were admitted with a shorter length of stay (mean difference 9.72 days) compared to 2005. Functional capacity of patients at admission was worse in 2011 for all measures. By hospital rehabilitation discharge, no differences were found between the two cohorts except for discharge gait speed; in 2011, patients walked faster (mean difference 0.58 m/s). Higher FIM gain and FIM efficiency was demonstrated in 2011, but differences between diagnostic groups were evident. Deconditioned patients overall demonstrated less gain and efficiency. In summary, improved service efficiencies were demonstrated with improved throughput of patients without compromising functional capacity at hospi-
Pedometers as a motivational tool without targets do not improve functional mobility.

Steps, duration, intensity and distance walked were measured during physical therapy sessions.

One trial reported that additional physical therapy was likely to be cost-effective in subacute rehabilitation.

About use of pedometers
A recent study aimed to test if pedometers, as a motivational tool, could affect the results of mobility outcomes on inpatient rehabilitation. With a randomized controlled clinical trial in a Subacute hospital rehabilitation unit in Australia on 78 participants with reduced mobility but with a clinician-determined capacity to improve. Both groups received their usual care. For the intervention group, a pedometer was worn on the hip with the step count visible to the participant which was recorded daily on an exercise log. For the control group, a pedometer was fitted onto the hip and they recorded estimated distances walked in an exercise log. Initial results were based on functional mobility using the De Morton Mobility Index. Significant improvements over time in functional mobility, comfortable walking velocity and functional independence measure were not influenced by the intervention. The daily average upright time (hours) in the first week of intervention differed between the intervention group and the control group. This study concluded that pedometers as a motivational tool without targets do not improve functional mobility in these participants. However, pedometers may improve daily upright time in this setting.


About duration of therapy
A recent study examined duration of therapy time with use of steps, duration, and intensity of active therapy time that may provide a better indicator of practice. The study quantified usual walking practice in terms of steps, duration and intensity of active therapy time, and distance walked during physical therapy sessions in people suffering from sub-acute strokes undertaking inpatient rehabilitation and to examine whether usual walking practice differed depending on walking ability. It is a prospective observational study conducted across two metropolitan rehabilitation units in Australia. Twenty-four stroke survivors were observed over three physical therapy sessions. Walking ability was categorized as unassisted or assisted based on Item 5 of the Motor Assessment Scale. Walking practice was categorized as basic or advanced. Steps, duration, intensity and distance walked were measured during physical therapy sessions. Overall, participants took 560 steps over a 13 minutes period at an intensity of steps 44 steps per minute and walked 222 meters in physical therapy. Unassisted walkers undertook more (or tended towards more) practice of advanced walking than assisted walkers in terms of steps, duration, intensity and distance. Stroke survivors undergoing inpatient rehabilitation spent approximately 20% of physical therapy actively engaged in walking practice. Those able to walk without assistance took more steps for longer, at a higher intensity.


About review and utility of rehabilitation and walking training
The aim of a recent study was to explain whether additional physical therapy services reduce length of stay, improve health outcomes, and are safe and cost-effective for patients with acute or subacute conditions. Randomized controlled trials evaluating additional physical therapy services on patient health outcomes, length of stay, or cost-effectiveness were eligible. Research identified 1524 potentially relevant articles, of which 11 new articles from 8 new randomised controlled trials. One trial reported that additional physical therapy was likely to be cost-effective in subacute rehabilitation.
mized controlled trials with 1563 participants were selected. In total, 24 randomized controlled trials with 3262 participants are included in this review. There is moderate-quality evidence that additional physical therapy services reduced length of stay by 3 days in subacute settings and low-quality evidence that it reduced length of stay by 0.6 days in larger settings. Additional physical therapy led to small improvements in self-care, activities of daily living, and health-related quality of life, with no increases in adverse events. There was no significant change in walking ability. One trial reported that additional physical therapy was likely to be cost-effective in subacute rehabilitation. Additional physical therapy services improve patient activity and participation outcomes while reducing hospital length of stay for adults. These benefits are likely safe, and there is preliminary evidence to suggest they may be cost-effective.

Another study examined the effects of randomized controlled trials of walking training on walking capacity and self-care on patients who were stroke victims. The meta-analyses included 38 randomized controlled trials from 44 reports. There was high evidence that in the subacute stage of a stroke, specific walking training resulted in improved walking speed and distance covered compared to traditional walking training of the same intensity. In the chronic stage, walking training resulted in increased walking speed and walking distance compared to non-placebo treatment, and increased walking speed compared with overall physiotherapy. On average, 24 training sessions over a 7 weeks period were needed. Walking training improves walking capacity and, to some extent, self-care in different stages of stroke, but the training frequency should be fairly high.

Studies of electromechanical-assisted devices proved the validity and effectiveness of these tools in gait rehabilitation, especially if used in association with conventional physiotherapy in stroke patients. The aim of this study was to compare the effects of different robotic devices in improving post-stroke gait abnormalities. 13 randomized controlled trials were undertaken, and the results were divided into sub-acute stroke patients and chronic stroke patients. We selected studies including at least one of the following tests: 10-meter walking test, 6-minute walk test, timed-up-and-go, 5-meter walk test, and functional ambulation categories. Stroke patients who received physiotherapy treatment in combination with robotic devices, such as Lokomat or Gait Trainer, were more likely to show better results, compared to patients who receive conventional gait training alone. Moreover, electromechanical-assisted gait training in association with functional electrical stimulations produced more benefits than the only robotic treatment alone. The evaluation of the results confirm that the use of robotics can positively affect the outcome of a gait rehabilitation treatment on stroke victim patients. The effects of different devices seem to be similar to the most commonly outcome evaluated by this review.

A study aimed at enhancing understanding of access to rehabilitation services in Australian and New Zealand acute care facilities for older adults living with dementia and/or living in residential aged care facilities (RACFs) following a hip fracture. The use of information on hip fracture rehabilitation was obtained from an online survey of 40 health professionals who were members of the Australian and New Zealand Hip Frac-
Rehabilitation pathways were determined according to individual patient characteristics and perceived potential benefit. Availability of hip fracture rehabilitation services differed by region and country. Around one in 10 respondents indicated that their facility had specific rehabilitation protocols for people living in RACFs or who were living with dementia. Barriers to providing hip fracture rehabilitation were commonly related to availability of resources. Rehabilitation pathways were determined according to individual patient characteristics and perceived potential benefit. Decision making was mainly based on information of a patient’s pre-fracture morbidity and residence. Three key themes and nine sub-themes emerged from the interviews. The development of consistent decision criteria and pathways for access to hip fracture rehabilitation could provide a standard approach of access to rehabilitation, particularly for patients with cognitive impairment and/or who reside in RACFs.