



Mini Review

## Role of Rehabilitation in Innovative Models for Mobility in the Short-Term Care Setting

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The role of rehabilitation services in the short-term care unit is shifting along with the inception of value-based care models in healthcare. Healthcare organizations seeking efficiency and effectiveness for reduced spending and decreased risk of re-hospitalization are looking to achieve meaningful outcomes using evidence-based care models through interdisciplinary approaches [1]. In the United States specifically, the expectation of the Patient Driven Payment Model is an example of reimbursement for health care services delivered received based upon accuracy of patient need assessment and change in functional status. The amount of time a patient spends with their physical, occupational and speech language pathologist each day is no longer the driving equation of how much the facility is reimbursed for the care provided. In this new value based care model, the care needs specific to the patient's condition are weighted to provide reimbursement that is based upon the outcome of the care provided [2]. Rehabilitation services will continue to be an integral piece of achieving success in the PDPM landscape with continued focus on remediation, compensation and education techniques our therapists have always provided. What the shift warrants for rehabilitation services is the increased need for interprofessional collaboration and focused efficiency to provide better care and improved outcomes at a lower cost in the post-acute setting of short-term rehabilitation.

Rehabilitation services provide a critical aspect of care in short-term rehab in screening, evaluating and providing rehabilitation intervention to patients admitted in their facilities to return to home. A key part of the rehabilitation stay is the patient's participation in mobility while in the center, balanced with any fall risk factors that may be present. Rehabilitation holds a role of identifying the physical and cognitive ability of patients to participate in mobility performance while in the short stay setting [3]. Gait performance, activity

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tolerance, strength, balance, and safety awareness are all components of the assessment as to whether a patient is able to perform a level of mobility without assistance while staying in the care facility [4].

While the implementation of fall mitigation strategies and equipment for those patients identified as being at high risk of falling are intentioned to provide maximum safety to the patient, many times the strategies lead to limitations in the patient's ability to mobilize independently. It is well established that increased participation in physical activity by older adults in the community as well as while in in-patient care settings not only maintains functional status, but advances the ability to perform functional activities and reduces risk of adverse events such as falls and hospital re-admissions [5-9]. The challenge in the multifactorial setting of short-term rehab is balancing how to empower patients to participate in mobility while maintaining safety during their physically vulnerable state. Barriers to increasing mobility outside of scheduled therapy time frames stem from not only rehabilitation department burdens, but the many tasks all members of the interdisciplinary team perform. Most research on the barriers associated with rehabilitation and nursing care to facilitate increased patient mobility are rooted in hospital care, though findings can be related to the challenging in-patient setting of short-term care. Barriers noted include having enough time to offer mobilization, knowledge of how to provide mobility safely to patients, low physical resources, low staff resources and therapist caseloads for skilled intervention versus offering repetitive practiced mobility activities [10,11].

In the skilled nursing environment, the utilization of restorative care to offer mobility participation for in-patient residents has been utilized primarily for the long-term care resident maintain ADL function and quality of life [12]. In the incoming PDPM model of care, restorative care is able to be captured for long-term as well as short-term care needs of patients as the role of physical activity outside of usual rehabilitation intervention is recognized to benefit the patient experience and support patient functional outcomes. A literature review by Benjamin et al. in 2014 revealed that the implementation of mobility programming in the skilled nursing environment required an interdisciplinary approach addressing the funding and staffing constraints shared by most of the randomized controlled trials [13]. A call to action was issued for care providers to consider innovative models of mobility in the in-patient setting recognizing socioeconomic and organizational barriers to facilitate mobility in every day care.

Innovative models of interdisciplinary collaboration focused on patient-specific goals are being explored in the skilled nursing industry as organizations seek to find efficient and effective ways to achieve value-based care. Creative partnerships of care providers in and between organizations consider how care is delivered and overseen in a way that most benefits the patient. Many organizations are evaluating upcoming technologies that can increase participation of patient mobility while decreasing burden on care teams, thereby allowing the focused care patients need. Technology is allowing for improved communication between providers, increased access to care in all settings, assisted interventions and identification of evidence-

based protocols in care delivery [14]. In the goal of addressing safety in the short-term care setting, technology is utilized in documentation systems, communication between providers and in fall risk management. Traditional technologies for fall risk management and injury prevention in short-stay settings include the use of bed/chair sensors to alert nursing staff when a patient is moving out of the stationary position and personal emergency alert systems that notify nursing staff when a patient needs assistance. These technologies support communication to caregivers but have not been proven to decrease falls or injuries from falls and have been found to increase burden to care teams and limit patient participation in mobility [15].

Emerging technologies in support of the safe performance of mobility include the implementation of a smart hip protection belt. The light, form-fitting belt can always be worn when a patient is in the short stay center to offer protection to the proximal femur using fall detection and intervention technology. In the event of a serious hip-impacting fall, the belt will deploy airbags around the hips to attenuate impact forces and alert caregivers as to the need for assistance [16].

Fall risk factors that are associated with a high risk of hip fracture include the level of mobility of patients who are receiving care in short-term rehab. These patients are attending to rehabilitation as they are not quite strong enough to perform activities of daily living completely independently or safely, though they are strengthening and returning to an independent level. Those patients who are able to perform a transfer, but demonstrate limited ability to maintain balance and/or perform locomotion once standing, are those at highest risk of hip fracture from falls [17,18]. Rehabilitation professionals assessing the mobility level with each patient in the setting and continuing to re-assess with each daily visit can identify those who may benefit from wearable hip protection and offer decreased risk of fall injury while in this transitional phase.

Implementation of this new technology has demonstrated an increased participation in mobility of the short-term care patients who did wear the device by 50% as compared to those who did not choose to wear it. To explore underlying reasons for increased mobility associated with use of the hip protection device, a concern-of-falling survey was administered to belt wearers and found that those who wore the hip protection belt while undergoing short-term rehabilitation reported a 22% increase in their confidence surrounding the performance of daily movements and activities. This early finding is consistent with others who have shown a correlation between fear of falling and self-limiting of mobility [19,20]. The relationship between a decrease in concern-of-falling and the increased participation in mobility while utilizing a smart hip protection belt during a rehabilitation stay merits further investigation.

Rehabilitation professionals can champion a culture of mobility with the use of technology which offers safe mobility to the patient in the short-term care setting. This highlights their role of prescribing mobility, maintaining safety and supporting patient-driven goals for reducing risk of falling, increasing functional outcomes and supporting discharge planning. Advancements of the wearable technology to be evaluated in the future in support of patient and rehabilitation goals are: mobility in step count per day, postural sway (deviation from vertical axis) in the performance of daily activities, on demand testing of Timed up and Go, gait speed and repeated Short FES-I surveys.

Access to the mobility metrics by the interdisciplinary team via mobile application or desktop will provide interdisciplinary communication and foster collaboration for patient-centered decision making. The utilization of such measures with easy access to tracking and data sharing further enhances the quality reporting for outcomes of rehabilitative care for the short-term facility [21].

Interdisciplinary collaboration with patient driven goals focused on their specific needs to function independently and return to home are critical in rehabilitation settings. With each care discipline recognizing their role in the collaborative care setting and also recognizing the importance of clear communication on shared goals, the utilization of technology has the capability of reducing burdens on staff for enabling safe mobility while improved functional outcomes in the short-stay setting [22,23]. Rehabilitation providers have the opportunity now as they hold a unique skill set, to champion innovative programs and technologies to achieve value-based outcomes compelling their role in post-acute care.

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