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**Research Article**

# Nursing and Physiotherapy Roles in Early Mobilization of Hospitalized Patients

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**Abstract:**

Early mobilization of hospitalized patients is a crucial component of modern healthcare, significantly contributing to enhanced recovery outcomes, reduced length of hospital stays, and diminishing the risks of complications such as deep vein thrombosis and pulmonary issues. Nurses play a pivotal role in this initiative, acting as frontline caregivers who assess patient mobility levels, provide emotional support, and encourage patients to participate in their recovery. They are responsible for developing individualized mobilization plans in collaboration with multidisciplinary teams, ensuring safety and comfort during the process. By educating patients about the benefits of movement, nursing professionals not only foster patient independence but also promote adherence to mobility protocols. Physiotherapists complement the efforts of nursing staff through their specialized knowledge in movement and rehabilitation techniques. They conduct thorough assessments of patients' physical capabilities, identify any limitations, and tailor exercise programs that are safe and effective. Physiotherapists implement evidence-based strategies to facilitate early mobilization, utilizing tools such as gait training, balance exercises, and strength training. Their expertise is particularly vital in managing patients with complex conditions, ensuring the transition from bed to walking is as smooth as possible. Through collaborative efforts, nursing and physiotherapy teams create a seamless approach to mobilization, greatly enhancing patient outcomes and overall satisfaction with their healthcare experience.

## 1. Introduction

The paradigm of inpatient care has undergone a profound and necessary shift over recent decades, moving away from a model that historically prescribed prolonged bed rest for a vast array of medical and surgical conditions. This traditional approach, once considered a cornerstone of therapeutic recovery, is now widely recognized as a significant contributor to patient morbidity, functional decline, and increased healthcare burdens [1]. In its place, the philosophy of early mobilization (EM) has emerged as a critical component of modern, evidence-based practice. Early mobilization can be broadly defined as the initiation of physical activity, which may include range-of-motion exercises, sitting on the edge of the bed, standing, transferring, and walking, within the first 24 to 72 hours of hospital admission or following a surgical or acute medical event, as clinically appropriate [2]. The overarching goal is to mitigate the deleterious effects of immobility and bed rest, thereby preserving the patient's functional capacity, accelerating recovery, and improving overall clinical outcomes.The adverse physiological consequences of immobility are systemic and rapid in onset. Musculoskeletal effects include profound muscle atrophy and weakness, often referred to as intensive care unit-acquired weakness (ICU-AW) in critically ill populations, alongside decreased bone density and joint contractures [3]. Cardiovascular deconditioning manifests as orthostatic hypotension, reduced cardiac output, and increased risk of thromboembolic events, most notably deep vein thrombosis (DVT) and pulmonary embolism (PE) [4]. Pulmonary complications are exacerbated by supine positioning and shallow breathing, leading to atelectasis, ventilation-perfusion mismatch, and increased risk of hospital-acquired pneumonia [5]. Furthermore, immobility negatively impacts gastrointestinal motility, integumentary integrity leading to pressure injuries, and psychological well-being, contributing to delirium, depression, and anxiety [6]. The cumulative effect of these iatrogenic complications is a syndrome of functional decline that can extend hospital length of stay, increase healthcare costs, and diminish the patient's quality of life long after discharge, potentially leading to institutionalization [7]. Implementing a successful and safe EM protocol is not the sole domain of any single healthcare profession. It necessitates a sophisticated, coordinated, and interprofessional collaboration, with nurses and physiotherapists serving as the pivotal anchors of this endeavor. Their roles, while distinct in focus and expertise, are profoundly complementary and interdependent.

### 2. Role of Nursing in Early Mobilization

Nurses, by virtue of their continuous presence at the patient's bedside, occupy a unique and indispensable position in the initiation, facilitation, and daily implementation of early mobilization. Their role transcends simple task completion and is embedded in the holistic fabric of patient care, encompassing assessment, coordination, direct intervention, education, and advocacy. As the primary caregivers who monitor patients around the clock, nurses are the frontline identifiers of mobilization readiness and the key agents in

integrating mobility into the fundamental activities of daily care [6].

### 3. Continuous Assessment and Identification of Mobilization Cues

The nursing role in EM begins with vigilant, ongoing assessment. Nurses are instrumental in conducting preliminary screenings to determine a patient's suitability for mobilization. This involves a holistic evaluation that synthesizes data from physiological monitoring, clinical presentation, and patient-reported status. Key parameters include vital sign stability (heart rate, blood pressure, respiratory rate, and oxygen saturation), level of consciousness and cognitive status, pain levels, and the presence of specific lines, tubes, or medical devices that may require securing or managing during activity [8]. Nurses assess for orthostatic tolerance by carefully monitoring vital signs during positional changes from supine to sitting. Furthermore, they evaluate the patient's functional baseline and current capacity through simple, validated tools such as the Perme Intensive Care Unit Mobility Score or the Johns Hopkins Highest Level of Mobility (JH-HLM) scale, which provide a common language for the team to set goals and track progress [9, 10]. Crucially, nurses identify "mobility opportunities" woven into routine care—such as during bathing, linen changes, or after respiratory treatments—transforming these moments into therapeutic activities aimed at enhancing functional recovery [11].

### 4. Integration of Mobility into Fundamental Nursing Care

A powerful strategy for embedding EM into culture is the concept of "mobility as a standard of care." Nurses operationalize this by deliberately integrating mobility activities into every patient interaction. This begins with basic interventions for all patients, including those in critical care. For bed-bound patients, nurses perform passive and active-assistive range-of-motion exercises to maintain joint flexibility and stimulate proprioception [12]. They implement repositioning schedules not only for pressure relief but also to provide varied sensory input and initiate isometric muscle contractions. The simple act of elevating the head of the bed improves pulmonary mechanics and engages core muscles. Progressing to sitting on the edge of the bed (dangling) is a significant nursing-led milestone that challenges cardiovascular systems and prepares the patient for upright activity [13]. Nurses assist with transfers from bed to chair, often using appropriate lifting aids and techniques to ensure safety for both patient and caregiver. Finally, they facilitate and supervise ambulation in the room or hallway, managing accompanying equipment like intravenous poles, catheters, or drains. This proactive integration ensures that mobility is not an "add-on" therapy but an inherent component of fundamental nursing practice.

### 5. Patient and Family Education and Engagement

Education is a cornerstone of the nurse's role in fostering successful EM. Nurses possess the skills to translate complex medical rationales into understandable terms, explaining to patients and their families why moving is safe and beneficial, even when it may feel challenging or counterintuitive [14]. They address fears and misconceptions, such as the worry that activity will disrupt wounds or lines, by providing clear, reassuring information. Nurses educate on the specific goals of each mobility activity, set realistic expectations for progression, and empower patients to become active participants in their own recovery. This includes teaching techniques for safe movement, the use of assistive devices, and energy conservation strategies. Engaging family members is equally vital; nurses can instruct them on ways to safely encourage and assist with mobility during visiting hours, thereby extending the therapeutic environment and providing psychosocial support that motivates the patient [15]. This educational partnership builds trust, enhances adherence, and promotes a sense of self-efficacy in the patient.

### 6. Advocacy, Coordination, and Communication within the Interprofessional Team

Perhaps one of the most critical nursing functions is that of coordinator and advocate. Nurses serve as the central communication hub between the patient, family, physiotherapist, physician, and other team members. They advocate for mobilization by communicating the patient's readiness and progress to the wider team, especially during interprofessional rounds [16]. Conversely, they communicate the physiotherapist's assessment and prescribed plan to other nursing staff to ensure consistency across shifts. Nurses play a key role in identifying and mitigating barriers to mobility, such as excessive sedation, inadequate pain management, or the presence of unnecessary tethers (e.g., urinary catheters, telemetry monitors when no longer indicated) [17]. They coordinate the logistical aspects of mobilization, ensuring the availability of personnel and equipment at the optimal time. By championing the mobility plan

and facilitating seamless interprofessional collaboration, nurses ensure that the intention for EM is translated into sustained, coordinated action.

## 7. The Specialized Role of Physiotherapy in Early Mobilization

Physiotherapists bring a distinct and specialized body of knowledge to the EM team, grounded in the principles of movement science, exercise physiology, and biomechanics. Their role is diagnostic, prescriptive, and progressive, focusing on conducting comprehensive evaluations, designing and implementing targeted therapeutic interventions, and systematically advancing the patient's functional mobility towards specific, measurable goals. While nurses integrate mobility into care, physiotherapists provide the expert prescription and progression of therapeutic exercise and functional training.

## 8. Comprehensive Functional and Physical Assessment

The physiotherapist initiates involvement with a thorough, standardized assessment that forms the basis for a personalized mobilization plan. This evaluation is more detailed and specific than the nursing screening, delving into the precise impairments limiting function. It includes a musculoskeletal examination of strength (often using manual muscle testing or dynamometry), joint range of motion, flexibility, and the presence of pain [18]. Neuromuscular assessments evaluate coordination, balance (static and dynamic), proprioception, and gait parameters. Cardiopulmonary assessment involves monitoring vital signs response to activity, exercise tolerance, and breathing patterns. Crucially, physiotherapists perform functional mobility assessments using validated tools like the Functional Independence Measure (FIM) or the ICU-specific Functional Status Score for the ICU (FSS-ICU) [19, 20]. These tools objectively quantify a patient's ability to perform tasks such as rolling, bridging, sitting, transferring, and walking. This comprehensive data allows the physiotherapist to identify the key deficits to be addressed and to establish a baseline from which progress can be meticulously measured.

## 9. Prescription and Implementation of Targeted Therapeutic Interventions

Based on their assessment, physiotherapists prescribe and deliver targeted interventions designed to address identified impairments and directly improve functional capacity. For critically ill or very weak patients, this begins with advanced techniques in bed, such as neurodevelopmental positioning, proprioceptive neuromuscular facilitation (PNF) patterns, and the use of tilt tables to provide gravitational stimulation and prepare for upright posture in a controlled manner [21]. They progress through a hierarchical sequence of functional tasks. Transfer training is a core component, focusing on safe, efficient, and increasingly independent methods (e.g., slide-board transfers, pivot transfers) [22]. Pre-gait and gait training involve exercises to improve weight-bearing, standing balance, and step initiation, often using parallel bars for initial support. Physiotherapists are experts in the selection, fitting, and instruction of assistive devices such as canes, walkers, and crutches. They provide specific therapeutic exercises for strengthening, endurance, and balance retraining, carefully dosing the intensity, duration, and frequency to provide an adequate therapeutic stimulus without causing undue fatigue or harm [23]. Furthermore, they may employ specialized techniques like neuromuscular electrical stimulation (NMES) to combat muscle atrophy in patients unable to participate actively, or implement inspiratory muscle training to improve respiratory strength and cough efficacy [24, 25].

## 10. Progression of Mobility and Functional Rehabilitation

A hallmark of the physiotherapist's role is the scientific progression of the mobilization regimen. They continuously re-assess the patient's response to therapy, monitoring for both positive adaptations (increased strength, endurance, improved vital sign response) and negative signs (excessive fatigue, desaturation, unsafe vital sign fluctuations) [26]. Based on this ongoing evaluation, they systematically advance the complexity, intensity, and independence of activities. Progression follows a logical sequence, such as increasing the distance walked, reducing the level of assistance required for a transfer, introducing uneven surfaces for balance challenge, or adding resistance to strengthening exercises. The physiotherapist sets short-term and long-term functional goals in collaboration with the patient and the team, ensuring the rehabilitation plan is goal-oriented and patient-centered. This disciplined approach to progression ensures that mobilization is not a static activity but a dynamic rehabilitation process that continually challenges the patient towards higher levels of function.

## 11. Education on Safe Movement and Long-Term Functional Recovery

Patient education by the physiotherapist is highly specific to movement mechanics and long-term functional recovery. They provide expert instruction on proper body mechanics during functional tasks to prevent injury and promote efficiency. This includes teaching safe techniques for getting in and out of bed, rising from a chair, navigating stairs, and managing falls. They educate patients on the importance of consistency, the difference between therapeutic discomfort and harmful pain, and strategies to manage fatigue [27]. Furthermore, physiotherapists play a crucial role in discharge planning related to mobility. They assess the patient's functional status for discharge to home versus a rehabilitation facility, recommend appropriate durable medical equipment for the home environment, and provide home exercise programs to ensure continuity of recovery post-discharge [28]. This forward-looking education bridges the gap between hospital-based EM and sustained functional independence in the community.

## 12. Synergy and Collaboration: The Interprofessional Engine of Success

The distinct yet overlapping roles of nurses and physiotherapists create a powerful synergy that is essential for effective and sustainable EM programs. Their collaboration is not merely sequential but integrated and dynamic, forming the operational engine that drives patient progress. The true potential of EM is realized only when these professions work in concert, communicating seamlessly and leveraging their respective expertise for a unified patient goal.

## 13. Complementary Expertise and Shared Decision-Making

The collaboration is founded on complementary expertise. The nurse's continuous, holistic surveillance provides the contextual "big picture" of the patient's medical and psychosocial status, while the physiotherapist's periodic, in-depth assessments provide the granular "movement diagnosis." Shared decision-making occurs when the nurse's identification of a mobilization opportunity (e.g., "the patient is alert, pain-controlled, and vital signs are stable this morning") meets the physiotherapist's prescribed plan (e.g., "today's goal is to practice sit-to-stand transfers with a walker") [29]. This collaboration is formalized in interprofessional rounds and through the use of shared documentation tools, such as mobility-specific sections in the electronic health record or bedside mobility goal boards, which make the plan visible to all team members and the patient [30]. In this model, the nurse may initiate the first step of the plan (e.g., moving the patient to the edge of the bed) and the physiotherapist may then arrive to execute the more technically complex component (e.g., gait training), or vice versa. This fluid partnership maximizes efficiency and therapeutic input.

## 14. Overcoming Barriers and Challenges to Implementation

Despite strong evidence, numerous barriers impede consistent EM implementation. These include patient-related factors (e.g., sedation, delirium, fear), clinician-related factors (e.g., knowledge gaps, fear of causing harm, perceived time constraints), and system-related factors (e.g., inadequate staffing, lack of equipment, fragmented communication) [31, 32]. The nurse-physiotherapist partnership is pivotal in overcoming these challenges. Together, they can advocate for protocol changes, such as sedation vacations or delirium prevention bundles that increase mobilization opportunities [33]. They can co-lead in-service education for other staff to build confidence and a culture of mobility. They can develop and champion unit-specific mobility protocols that standardize screening and intervention, reducing ambiguity and saving time [34]. By presenting a united front, they can more effectively negotiate with physicians regarding the necessity of removing lines or adjusting medications that hinder mobility. Their combined advocacy carries greater weight in securing necessary resources and driving cultural change.

## 15. Models of Effective Interprofessional Collaboration

Successful EM programs are often underpinned by formalized collaborative models. One prominent example is the "Mobility Team" or "ABCDE Bundle" (Awakening and Breathing Coordination, Delirium monitoring/management, and Early mobility) in ICUs, which explicitly requires nurse-respiratory therapist collaboration and often includes physiotherapy [35]. Another model is the use of "Mobility Technicians" or "Patient Care Technicians" specifically trained to assist with mobility under the direction of nurses and physiotherapists, thereby extending the team's capacity [36]. Structured communication frameworks, such as daily goals sheets or bedside huddles focused on mobility, ensure alignment. The most effective models are those that blur traditional professional boundaries in a climate of mutual

respect, where a nurse may feel empowered to progress a patient within established safety parameters, and a physiotherapist values and incorporates the nurse's contextual observations into the treatment plan [37]. This requires ongoing interprofessional education and a shared commitment to patient-centered outcomes over professional turf.

## 16. Impact on Patient Outcomes and Healthcare Systems

The robust collaboration between nursing and physiotherapy in delivering EM has a demonstrable and multifaceted impact on patient outcomes and healthcare system efficiency. The benefits are quantifiable across a spectrum of clinical and economic indicators, validating the investment in this interdisciplinary approach.

### 16.1 Clinical Outcomes:

The primary impact is a significant reduction in the complications of immobility. Studies consistently show that EM reduces the incidence and severity of ICU-AW, preserving muscle mass and strength [38]. This directly translates to improved functional status at discharge. EM is associated with a decreased duration of mechanical ventilation and a lower incidence of ventilator-associated pneumonia by improving pulmonary hygiene and respiratory muscle function [39]. By enhancing cardiovascular conditioning and promoting venous return, EM contributes to a lower risk of DVT and orthostatic hypotension. Furthermore, by providing cognitive stimulation, normalizing sleep-wake cycles, and reducing sedation exposure, EM is a key non-pharmacological intervention in preventing and managing delirium [40]. The aggregate effect of mitigating these complications is a more robust and rapid physiological recovery, enabling patients to achieve key milestones sooner.

### 16.2 Functional and Quality of Life Outcomes

Beyond acute complications, EM profoundly influences longer-term functional recovery and quality of life. Patients engaged in early, progressive mobility programs demonstrate greater independence in activities of daily living at the time of hospital discharge. They are more likely to be discharged directly to home rather than to subacute rehabilitation or skilled nursing facilities [41]. Follow-up studies indicate that the functional benefits gained in the hospital can persist, contributing to a higher quality of life and reduced caregiver burden in the months following hospitalization. By preventing the downward spiral of deconditioning, EM helps patients maintain their identity and autonomy, which are central to psychological well-being and overall life satisfaction.

### 16.3 System-Level Outcomes: Efficiency and Economic Impact

From a systems perspective, effective EM collaboration drives efficiency. The reduction in major complications (e.g., pneumonia, DVT, pressure injuries) directly decreases the need for costly diagnostics, treatments, and prolonged specialist care. Perhaps the most significant economic benefit is the reduction in hospital length of stay. By accelerating functional recovery, patients meet discharge criteria sooner [7]. This not only frees up valuable acute care beds but also reduces the overall cost per episode of care. Furthermore, by increasing the rate of discharge to home, EM reduces the downstream costs associated with post-acute care facilities. While implementing interprofessional EM programs may require upfront investment in training and sometimes personnel, the return on investment through avoided complications and shorter stays is well-documented, making it a financially sound strategy for healthcare institutions aiming to improve value-based care.

## 17. Conclusion

The early mobilization of hospitalized patients represents a fundamental evolution in clinical philosophy, from passive convalescence to active therapeutic engagement. Its successful implementation is not a simple task but a complex clinical intervention that hinges on the sophisticated, interprofessional collaboration between nursing and physiotherapy. As this essay has detailed, nurses provide the essential, continuous foundation for EM through holistic assessment, integration of mobility into routine care, patient education, and team coordination. Physiotherapists contribute the specialized expertise in movement science, providing diagnostic assessment, targeted intervention, and systematic progression of functional rehabilitation. While their scopes of practice have distinct emphases, they overlap in a zone of shared responsibility for patient mobility, creating a powerful synergy.The true efficacy of EM is only unlocked when these professions transcend traditional boundaries to communicate seamlessly, make shared decisions, and advocate collectively for a culture where movement is prioritized as a

vital sign of recovery. This collaboration directly translates into superior patient outcomes: fewer complications, faster functional recovery, improved quality of life, and more efficient healthcare delivery. Future efforts must focus on strengthening this partnership through interprofessional education, the development of standardized protocols, and the creation of system-level supports that empower nurses and physiotherapists to lead this charge.

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