



A Systematic Review of Post-Fall Care: Developing an Integrated Continuum from Medical Assessment to Functional Rehabilitation

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Abstract

Background: Falls in older adults are a frequent global health occurrence, a sign of physiologic failure, and lead to injury, functional decline, fear of falling, and death. In spite of prevention measures, postfall care is often fragmented, focusing on the management of injury and neglect of etiology.

Aim: This review aggregates current evidence to propose a standardized, patient-centered plan for comprehensive post-fall care aimed at addressing gaps in care from the time of initial response through long-term restoration of function.

Methods: A narrative review of recent literature (2025) was conducted to summarize and synthesize evidence on the components of an optimal post-fall pathway, including initial assessment, interdisciplinary study, and rehabilitation strategies.

Results: The results present an uninterrupted, five-step process: 1) Initial nurse response and triage; 2) Complete medical workup to determine etiology; 3) Interdisciplinary care planning; 4) Restoration of function through physical and occupational therapy; and 5) Secondary prevention and transition planning. This model emphasizes the key roles of all health care professionals in creating a unitary care continuum.

Conclusion: This integrated, multidisciplinary practice can transform a fall from an incident to an opportunity for holistic assessment, proactive prevention of subsequent risk, preservation of patient autonomy, and improvement in quality of life.

Keywords: post-fall care, geriatric falls, interdisciplinary care, functional restoration, fall prevention.

Introduction

A fall is not typically an unanticipated accident but rather is more appropriately termed a sentinel event that signals impending failure of one or more of the complexes, interdependent systems that maintain postural stability (Takase, 2023). The statistics are sobering. Falls are the leading cause of fatal and non-fatal injuries in individuals 65 years and older, with great individual health and healthcare system consequences worldwide (World Health Organization, 2025). Direct medical costs of fall-related injury, particularly hip fractures and traumatic brain injury, impose a high economic burden (Wang et

al., 2024). But the true burden is far more than that immediate physical damage. A fall can trigger a "post-fall syndrome" of fearfulness, loss of mobility, social isolation, loss of function, and loss of independence, each feeding into a cycle that raises the risk of subsequent falls and institutionalization exponentially (Hazazi, 2025).

Despite the recognized extent of this problem, clinical practice has historically shown a reactive and often short-term approach to post-fall care. The first consideration has too often been limited to the "mechanical" aspect of the fall: diagnosis and treatment of any ensuing fracture or laceration. This is

required, but it is grossly insufficient. It does not address the fundamental question: Why did this person fall? A fall is a symptom, not a diagnosis, and treatment needs to be diagnostic, therapeutic, and preventative in intent. The current standard of care is extremely variable and fragmented. The initial response from the nursing staff is not always formally linked to a subsequent thorough medical evaluation, and rehabilitation service referrals are often not initiated or postponed (Stephenson et al., 2016). This fragmented process generates lost opportunities for identifying and managing modifiable hazards, placing patients at risk of having another fall and functional deterioration.

Therefore, this review makes the case for the need for a change of paradigm to an integrated, systematic, and patient-focused post-fall management process. This process must be initiated at the moment of the fall by the nurse's incident report and then continue unimpeded through a comprehensive medical and geriatric assessment, culminating in a firm plan of functional restoration and long-term risk reduction. By adding new 2025 evidence to this article, the framework will specify the key components of each phase of this pathway, emphasizing imperative handoffs and interprofessional teamwork essential for the best results. This article aims to provide a brief, evidence-based roadmap for clinicians and health care organizations to convert a potentially traumatic experience into an opportunity for thorough evaluation and anticipatory intervention.

The Initial Response and Triage: The Nurse's Important Role

The management process begins the instant that a fall is discovered or reported. The bedside nurse is the one who makes the initial response, and her interventions set everything else into motion. This stage is not necessarily one of completing an incident report for risk management purposes; it is a critical clinical assessment that must balance immediate patient safety against the initiation of a diagnostic process.

Immediate Clinical Assessment and Stabilization

The priority of the nurse at first onset is the physiological stability and immediate safety of the patient. This involves a rapid but also thorough ABCDE (Airway, Breathing, Circulation, Disability, Exposure) like trauma assessment to establish whether or not there are any potentially life-threatening injuries (Quigley, 2020). Concurrently, the nurse must assess the patient's neurological status, e.g., consciousness level and signs of head trauma, without shifting the patient in the event of suspected spinal injury. After the patient is stabilized and safely lifted from the floor using proper lifting equipment and techniques to prevent re-injury to the patient and employees, an extended focused assessment can be initiated (Dunning, 2009).

The Structured Post-Fall Assessment and Incident Report

The incident report must be converted from a simple clerical form to a high-level clinical tool that captures essential data for root cause analysis. An organized post-fall evaluation should be performed at once. This includes a complete history from the patient (if alert) and from witnesses: what they were doing, prodromal symptoms (such as dizziness, palpitations, weakness in the legs), and the precise mechanism (such as tripping, syncope, legs giving way) (Wenzel, 2023). Physical examination must systematically examine for trauma, including careful skin examination for hematomas and abrasions, neurovascular examination of all extremities, and assessment of pain, notably in the head, spine, and hip. Vital signs, including orthostatic blood pressure and heart rate, because orthostatic hypotension is an underappreciated cause of falls (Naccarato et al., 2012). This integrated data collection at the time of care forms the foundation layer upon which all medical workup is based.

The Comprehensive Medical Workup

The information gathered by the nurses should be the direct impetus for a formal medical workup by a physician, advanced practice provider, or geriatrician. This workup encompasses beyond to tackle the reason (the etiology of the falls) and not the result (the injury). The workup is multi-systematic, assessing the most crucial areas known to be related to fall risk.

Medical History and Medication Reconciliation

A detailed review of history is most crucial. This involves the recognition of chronic disorders that are risk factors for falls, i.e., Parkinson's disease, stroke, peripheral neuropathy, osteoarthritis, cognitive impairment, and depression (Yan et al., 2022). One of the most important, but not utilized to its potential, areas is proper medication reconciliation. Particular attention must be directed to psychotropic medications (benzodiazepines, antipsychotics, antidepressants), antihypertensives, diuretics, anticholinergics, and hypoglycemics, all of which have a high fall risk profile (Seppala et al., 2021). The policy would be to critically evaluate the requirement for each drug, with the intention to deprescribe or reduce the dose wherever the situation demands.

Focused Physical and Neurological Examination

The physical examination must be tailored according to the context of the fall, but needs to include some characteristic features invariably. A cardiovascular examination is essential, focusing on arrhythmias, valvular disease, and, as noted above, orthostatic hypotension (Fedorowski et al., 2019). A musculoskeletal examination ought to examine for strength, particularly of the lower limbs, and joint range of motion and deformities like foot drop. The neurological examination ought to examine peripheral sensation (for neuropathy), proprioception, coordination, and balance. A particular examination of vision and hearing is also required because sensory

loss significantly lessens postural stability (Lord & Dayhew, 2001).

Functional and Cognitive Assessment

No workup is complete without taking the measurement of the patient's baseline and current cognitive and functional abilities. Standardized assessment tools are a goldmine here. Morse Fall Scale or Hendrich II Fall Risk Model may be used in risk stratification, but more informative for restoration planning are performance-based measures like the Timed Up and Go (TUG) test, Berg Balance Scale, and gait speed analysis (Barry et al., 2014). Cognitive testing with tools like the Mini-Mental State Examination (MMSE) or Montreal Cognitive Assessment (MoCA) is required, as cognitive impairment is a common, and often reversible, risk for falls, particularly in the context of delirium (Avelino-Silva et al., 2017). Secondly, assessment of the patient's fear of falling on the Falls Efficacy Scale-International (FES-I) is crucial because this measure of the patient's psychological state can be as disabling as a physical impairment (McColl et al., 2022).

Diagnostic Investigations

Diagnostic tests should be ordered on the basis of history and physical examination, and not randomly. Routine laboratory testing is often warranted, including a complete blood count (for anemia), a comprehensive metabolic panel (for electrolyte imbalance, kidney function, and glucose), thyroid-stimulating hormone, and Vitamin B12 and D levels (Wei et al., 2022). At least an electrocardiogram (ECG) is the minimum to rule out arrhythmias or conduction defects. Further cardiac assessment, such as an echocardiogram or prolonged cardiac monitoring (e.g., with Holter monitoring or implantable loop recorder), is indicated with syncope or arrhythmia (Sheldon et al., 2025). Neuroimaging, such as CT or MRI of the brain, is required for head injury with persistent neurological symptoms or in the case of suspected new central nervous system lesion (Birmingham, 2014). Table 1 and Figure 1 summarize the key components of the integrated post-fall medical evaluation.

Table 1: Key Components of the Integrated Post-Fall Medical Evaluation

Domain	Key Assessment Components	Potential Findings & Implications
Medical History	Chronic conditions (e.g., Parkinson's, stroke, CHF), previous falls, history of syncope.	Identifies predisposing chronic diseases and patterns of recurrent falls.
Medication Review	Comprehensive list of all prescriptions, OTC, and supplements. Focus on psychotropics, antihypertensives, and anticholinergics.	Polypharmacy (≥ 5 meds) and specific drug classes are major modifiable risk factors.
Cardiovascular	Orthostatic vital signs, cardiac auscultation, and ECG. Consider an echocardiogram, a Holter monitor.	Identifies orthostatic hypotension, arrhythmias (e.g., AFib, bradycardia), and structural heart disease.
Neuromuscular	Muscle strength (especially quadriceps), joint ROM, foot inspection, proprioception, and peripheral sensation.	Reveals sarcopenia, arthritis, neuropathy, or other impairments contributing to instability.
Balance & Gait	Observation of gait, Timed Up and Go (TUG) test, Berg Balance Scale, Romberg test.	Quantifies functional impairment, helps target specific deficits in rehabilitation.
Sensory	Visual acuity testing, hearing assessment.	Uncovers sensory deficits that reduce awareness of environmental hazards.
Cognitive & Psychological	Cognitive screen (MoCA, MMSE), assessment for delirium, Fear of Falling (FES-I), and mood.	Identifies dementia/delirium impacting judgment/safety; addresses psychological barriers to mobility.



Figure 1. Components of the Comprehensive Post-Fall Medical Workup

The Interdisciplinary Team

Post-fall complexity is such that it demands an interdisciplinary team (IDT) approach. No one clinician can be asked to explore all the etiologies of a fall and its consequences. The core team should have at least the primary care physician or geriatrician, nursing staff, a physical therapist (PT), an occupational therapist (OT), and a pharmacist (Tsiachristas et al., 2017). Social workers and dietitians are also valuable assets.

The team is supplemented by the physician or geriatrician, who conducts the diagnostic workup, synthesizes data from all members of the team, and coordinates medical comorbidities. The nurses provide constant observation, implement safety interventions, reinforce education, and provide the

team's communication with the patient and family. The physical therapist is crucial in the assessment and treatment of impairments in strength, balance, and gait. They prescribe and manage increasingly difficult exercise programs that are aimed at restoring function (Yao et al., 2020). Occupational therapists prioritize the safety of the patient in accomplishing Activities of Daily Living (ADLs). They assess the home environment (typically by conducting a home safety evaluation), recommend adaptive equipment (such as toilet seats, grab bars), and teach energy conservation techniques (Liu et al., 2018). The pharmacist conducts a thorough medication review, identifies fall-risk-increasing medications, and offers focused deprescribing or alternative treatment options to the prescribing clinician (Alharbi et al., 2025). This group must talk to each other frequently via structured meetings or shared electronic health records to have a single, coordinated care plan.

The Functional Restoration Plan

Having a thorough understanding of the deficits and risks of the patient, the focus now firmly moves away from diagnosis to treatment. The functional restoration plan is the centerpiece of post-fall treatment, individualized to address the specific impairments uncovered by the workup.

Physical Therapy-Guided Exercise Interventions

The cornerstone for functional restoration after a fall is an exercise program guided by physical therapy, concentrated and progressive. Evidence clearly favors multi-component interventions that are carefully designed to the specific assets and deficits of the individual. An intensive program integrates a variety of necessary elements: strength training with focus on the major lower extremity muscles, particularly the quadriceps and hip extensors, to build power necessary for common movements like rising from a chair and climbing stairs (Sherrington et al., 2019); balance training, unavoidable and ranging from simple tandem stands to complex dynamic tasks on various surfaces, with modalities like Tai Chi also having a solid evidence base for promotion of stability and prevention of falls (Wayne et al., 2025); and gait training to normalize abnormal patterns, improve stride length and velocity, and rehearse safe passage through obstacles. Besides this, the physical therapist's role in critically assessing, prescribing, and appropriately fitting an adequate assistive device, i.e., a cane or walker, is of paramount significance as the incorrect device becomes a cause of major falls themselves (Hunter, 2019).

Occupational Therapy and Environmental Modification

The OT facilitates building trust and safety in performing daily living activities. This involves the completion of ADLs like bed-to-chair transfer, bathing, and dressing in supervised, safety-controlled situations. A pre-discharge home safety assessment, either virtual or in-person, is best practice. The OT may also detect and suggest modifications for risks

such as poor lighting, loose mats, messy paths, and a lack of grab bars in the bathroom (Caña-Pino & Pesado-Fernández, 2025). This participatory approach fills the chasm between the clinical setting and the patient's real-life environment.

Cognitive and Psychological Rehabilitation

For cognitively impaired individuals, their rehabilitation plans must be adjusted. This involves providing clear, simple directions, the utilization of memory aids, and routine maintenance. For all patients, fear of falling elimination is a high priority during therapy. Cognitive-behavioral techniques, graded exposure to feared activity (e.g., unassisted walking), and supported success during physical therapy can help disrupt the cycle of fear-avoidance, thereby promoting activity and participation (van Haastregt et al., 2007).

Secondary Prevention and Long-Term Care

A single fall is the best predictor of another fall. Therefore, the acute restorative phase must lead logically into a practical, long-term secondary prevention program, including ongoing supervision and reinforcement.

Creating an Individualized Fall Prevention Plan

The IDT, patient, and family should jointly develop a written, straightforward fall prevention plan before discharge. This plan should enumerate the risk factors identified (e.g., "orthostatic hypotension," "leg weakness"), the specific measures to manage them (e.g., "rise slowly," "do daily exercises," "use walker for all mobility"), and the home environment adaptations to make (Saud Faleh Alanazi, 2024). Having the patient as a cooperative participant in this assignment improves adherence and self-efficacy.

Technology and Remote Monitoring

Emerging technologies offer powerful new instruments for extended management. Wearable sensors and smart home systems can monitor falls, activity levels, and gait and give objective information to clinicians and caregivers, and notify them of a change in a patient's status or a fall event (Mohammed Abu Haddash, 2025). Tele-rehabilitation sites can extend PT and OT services out into the home, providing ongoing care and encouragement and feedback, especially beneficial for rural or transport-limited patients (Gatica-Rojas & Cartes-Velásquez, 2023).

Community Resources and Caregiver Education

Successful long-term care is more than the healthcare system's concern. Providers ought to be aware of and refer the patient to community-based fall prevention interventions such as "Stepping On" or "A Matter of Balance," which involve peer support and regular exercise within a group setting (Yamada et al., 2013). Equally vital is caregiver and family education and support. They need to know the patient's risk factors, why the care plan is being undertaken, how to support safely without causing dependency, and functional decline signs (Almeida et al., 2024). Table 2 illustrates the seamless post-fall management

pathway. Figure 2 illustrates the five-phase interdisciplinary care pathway for post-fall management in older adults.

Table 2: The seamless post-fall management pathway.

Phase of Pathway	Key Personnel	Primary Goals & Interventions
1. Immediate Response & Triage	Bedside Nurse, Nurse Aide	Ensure safety (ABCDE), assess for injury, document fall circumstances, measure orthostatic vitals, and complete a structured incident report.
2. Comprehensive Medical Workup	Physician, Geriatrician, Pharmacist, Nurse	Diagnose fall etiology: detailed history, medication review, physical/neurological/cognitive exam, order & interpret diagnostic tests.
3. Interdisciplinary Care Planning	Entire IDT (MD, RN, PT, OT, PharmD, SW)	Synthesize assessment data, establish shared goals, and develop a unified, patient-centered care plan for restoration and prevention.
4. Functional Restoration	Physical Therapist, Occupational Therapist	PT: Restore strength, balance, gait through targeted exercises; prescribe/fit assistive devices. OT: Retrain ADLs, conduct home assessment, recommend adaptive equipment and environmental modifications.
5. Secondary Prevention & Transition	Entire IDT, Patient, Caregivers, Community Partners	Create & educate on personalized fall prevention plan; arrange follow-up; refer to community programs; implement remote monitoring if appropriate.

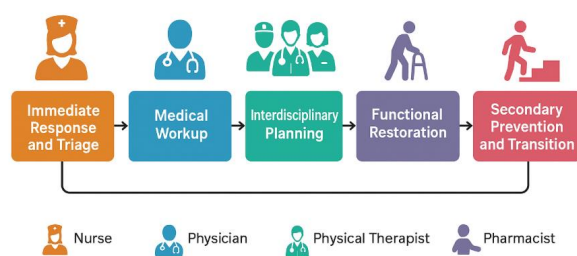


Figure 2. The Seamless Post-Fall Management Pathway.

Discussion

This holistic model of post-fall management is supported by a strong and growing evidence base. But its effective implementation in real clinical practice is being thwarted by significant barriers. These are the time constraints, inadequate personnel, information systems operating in silos that create barriers to communication, lack of reimbursement for certain interdisciplinary services, and resistance to changing entrenched workflows (Parekh et al., 2025). The most daunting one of them is gaining sustained buy-in across all levels of the healthcare organization, including the front-line personnel and top management.

A systematic approach to implementation can overcome such challenges. These also include developing and executing standardized clinical pathways and order sets within the Electronic Health Record (EHR) that can walk clinicians through each step of the post-fall protocol (Wieczorek & Chakravarthy, 2025). Interdisciplinary training and defining clear roles and responsibilities are the foundation of developing effective teamwork. Secondly, healthcare systems should research and advocate for value-based payment systems that

financially incentivize high-quality, well-coordinated post-fall care rather than the current fee-for-service model, which is prone to payment for volume rather than outcome (Bowie, 2025).

Follow-up research should focus on refining the most successful components of the functional restoration plan across different subgroups of patients (e.g., those with cognitive impairment vs. those without), examining the cost-effectiveness of technology-based monitoring, and developing implementation science approaches to incorporate these extremely complicated interventions into differing care environments effectively.

Conclusion

A fall is a characteristic, often traumatic event that requires an answer much more sophisticated than just responding to an injury. It offers an opportune moment to interrupt a pattern of decline. This review has addressed a vision of an uninterrupted, seamless continuum that begins with the nurse's skilled initial assessment and continues stepwise through a rigorous, multi-domain medicolegal evaluation, to a customized and proactive plan for functional restoration and secondary prevention. By adopting this patient-centered, interdisciplinary model, health professionals can transform the post-fall period from a reactive, fragmented process into a potent tool for sustaining function, promoting resilience, and preserving the independence and quality of life of our most vulnerable patients.

References

1. Alharbi, S. M., al harish, T. M., Attyah Zead Alqurashi, E., Alsubaie, M. D., Alanazi, N. M., Almutairi, B. A., ... Alsharari, Y. D. D. (2025). Artificial Intelligence and Robotics

- in Surgery: The Future of Precision Medicine. *Saudi Journal of Medicine and Public Health*, *2*(2), 159–170. <https://doi.org/10.64483/jmph-69>
2. Almeida, A. S., Paguia, A., & Neves, A. P. (2024). Nursing interventions to empower family caregivers to manage the risk of falling in older adults: A scoping review. *International Journal of Environmental Research and Public Health*, 21(3), 246. <https://doi.org/10.3390/ijerph21030246>
 3. Avelino-Silva, T. J., Campora, F., Curiati, J. A., & Jacob-Filho, W. (2017). Association between delirium superimposed on dementia and mortality in hospitalized older adults: A prospective cohort study. *PLoS medicine*, 14(3), e1002264. <https://doi.org/10.1371/journal.pmed.1002264>
 4. Bermingham, S. L. (2014). The appropriate use of neuroimaging in the diagnostic work-up of dementia: an economic literature review and cost-effectiveness analysis. *Ontario health technology assessment series*, 14(2), 1. <https://pubmed.ncbi.nlm.nih.gov/24592297/>
 5. Barry, E., Galvin, R., Keogh, C., Horgan, F., & Fahey, T. (2014). Is the Timed Up and Go test a useful predictor of risk of falls in community dwelling older adults: a systematic review and meta-analysis. *BMC geriatrics*, 14(1), 14. <https://doi.org/10.1186/1471-2318-14-14>
 6. Bowie, J. (2025). *Centers for Medicare and Medicaid No-Pay Policy for Fall Prevention: A Policy Analysis Project* (Doctoral dissertation, Jacksonville University).
 7. Caña-Pino, A., & Pesado-Fernández, L. (2025). Occupational Therapy Interventions for Fall Prevention in Older Adults: A Systematic Review of Multimodal Strategies. *Physiologia*, 5(3), 33. <https://doi.org/10.3390/physiologia5030033>
 8. Dunning, E. (2009). Implementing a safe patient handling program. *Nursing2020 Critical Care*, 4(2), 44-50. DOI: 10.1097/01.CCN.0000347129.70704.f6
 9. Fedorowski, A., Ricci, F., & Sutton, R. (2019). Orthostatic hypotension and cardiovascular risk. *Polish Heart Journal (Kardiologia Polska)*, 77(11), 1020-1027. <https://doi.org/10.33963/KP.15055>
 10. Gatica-Rojas, V., & Cartes-Velásquez, R. (2023). Telerehabilitation in low-resource settings to improve postural balance in older adults: a non-inferiority randomised controlled clinical trial protocol. *International Journal of Environmental Research and Public Health*, 20(18), 6726. <https://doi.org/10.3390/ijerph20186726>
 11. Hunter, S. W. (2019). Assistive devices, falls, and cognitive aspects. *Falls and Cognition in Older Persons: Fundamentals, Assessment and Therapeutic Options*, 139-150. https://doi.org/10.1007/978-3-030-24233-6_8
 12. Hazazi, Y. O. (2025). Strengthening Postpartum Depression Screening and Treatment within Primary Healthcare Centers in Riyadh 1st Cluster. *Saudi Journal of Medicine and Public Health*, *2*(2), 105–113. <https://doi.org/10.64483/jmph-56>
 13. Liu, C. J., Chang, W. P., & Chang, M. C. (2018). Occupational therapy interventions to improve activities of daily living for community-dwelling older adults: A systematic review. *The American Journal of Occupational Therapy*, 72(4), 7204190060p1-7204190060p11. <https://doi.org/10.5014/ajot.2018.031252>
 14. Lord, S. R., & Dayhew, J. (2001). Visual risk factors for falls in older people. *Journal of the American Geriatrics Society*, 49(5), 508-515. <https://doi.org/10.1046/j.1532-5415.2001.49107.x>
 15. McColl, L., Strassheim, V., Linsley, M., Green, D., Dunkel, C., Trundle, H., ... & Parry, S. W. (2022). Falls efficacy scale International (FES-I) as a predictor of gait and balance abnormalities in community dwelling older people. *medRxiv*, 2022-09. <https://doi.org/10.1101/2022.09.29.22280485>
 16. Mohammed Abu Haddash, N. A. (2025). Comprehensive Review of the Success of the Hospital-at-Home Program in Today's Healthcare Delivery. *Saudi Journal of Medicine and Public Health*, *2*(2), 45–52. <https://doi.org/10.64483/jmph-31>
 17. Naccarato, M., Leviner, S., Proehl, J., Barnason, S., Brim, C., Crowley, M., ... & Papa, A. (2012). Emergency Nursing Resource: orthostatic vital signs. *Journal of Emergency Nursing*, 38(5), 447-453. <https://doi.org/10.1016/j.jen.2012.05.011>
 18. Parekh, A., Hill, K. D., & Guerbaai, R. A. (2025). Exploring Post-Fall Management Interventions in Long-Term Care Facilities and Hospitals for Older Adults: A Scoping Review. *Journal of Clinical Nursing*, 34(2), 408-421. <https://doi.org/10.1111/jocn.17546>
 19. Quigley, P. A. (2020). Assessing, Managing, and Preventing Falls in Acute Care. *Evidence-Based Geriatric Nursing Protocols for Best Practice*, 375.
 20. Saud Faleh Alanazi. (2024). Comparative Evaluation of the Pharmacological

- Mechanisms, Clinical Indications, and Risk Management Strategies of Epidural Anesthesia in Surgical and Obstetric Interventions. *Saudi Journal of Medicine and Public Health*, 1*(1), 47–57. <https://doi.org/10.64483/jmph-36>
21. Seppala, L. J., Petrovic, M., Ryg, J., Bahat, G., Topinkova, E., Szczerbińska, K., ... & Van der Velde, N. (2021). STOPPFall (screening tool of older persons prescriptions in older adults with high fall risk): a Delphi study by the EuGMS task and finish group on fall-risk-increasing drugs. *Age and ageing*, 50(4), 1189–1199. <https://doi.org/10.1093/ageing/afaa249>
 22. Sheldon, R. S., Grubb II, B. P., Olshansky, B., Shen, W. K., Calkins, H., Brignole, M., ... & Kanjwal, K. (2015). 2015 heart rhythm society expert consensus statement on the diagnosis and treatment of postural tachycardia syndrome, inappropriate sinus tachycardia, and vasovagal syncope. *Heart rhythm*, 12(6), e41–e63. <https://doi.org/10.1016/j.hrthm.2015.03.029>
 23. Sherrington, C., Fairhall, N. J., Wallbank, G. K., Tiedemann, A., Michaleff, Z. A., Howard, K., ... & Lamb, S. E. (2019). Exercise for preventing falls in older people living in the community. *Cochrane database of systematic reviews*, (1). <https://doi.org/10.1002/14651858.CD012424.pub2>
 24. Stephenson, M., McArthur, A., Giles, K., Lockwood, C., Aromataris, E., & Pearson, A. (2016). Prevention of falls in acute hospital settings: a multi-site audit and best practice implementation project. *International Journal for Quality in Health Care*, 28(1), 92–98. <https://doi.org/10.1093/intqhc/mzv113>
 25. Takase, M. (2023). Falls as the result of interplay between nurses, patient and the environment: using text-mining to uncover how and why falls happen. *International journal of nursing sciences*, 10(1), 30–37. <https://doi.org/10.1016/j.ijnss.2022.12.003>
 26. Tsiachristas, A., Langhorne, P., Burke, O., Harwood, R. H., Conroy, S. P., Kircher, T., ... & Robinson, D. (2017). Comprehensive geriatric assessment for older adults admitted to hospital. *Cochrane database of systematic reviews*, (9). <https://doi.org/10.1002/14651858.CD006211.pub3>
 27. van Haastregt, J. C., Zijlstra, G. R., van Rossum, E., van Eijk, J. T., de Witte, L. P., & Kempen, G. I. (2007). Feasibility of a cognitive behavioural group intervention to reduce fear of falling and associated avoidance of activity in community-living older people: a process evaluation. *BMC health services research*, 7(1), 156. <https://doi.org/10.1186/1472-6963-7-156>
 28. Wang, Z., Zhang, Y., Wu, J., & Zhang, Q. (2024). Global, regional and country-specific burden of patella, tibia or fibula, or ankle fractures and its prediction to 2035: findings from global burden of disease study 2019. *BMC Public Health*, 24(1), 3162. <https://doi.org/10.1186/s12889-024-20675-7>
 29. Wayne, P. M., Ahn, A., Clark, J., Irwin, M. R., Kong, J., Lavretsky, H., ... & Yeh, G. Y. (2025). The Science of Tai Chi and Qigong as Whole Person Health-Part I: Rationale and State of the Science. *Journal of Integrative and Complementary Medicine*, 31(6), 499–520. <https://doi.org/10.1089/jicm.2024.0957>
 30. Wei, F. L., Li, T., Gao, Q. Y., Huang, Y., Zhou, C. P., Wang, W., & Qian, J. X. (2022). Association between vitamin D supplementation and fall prevention. *Frontiers in endocrinology*, 13, 919839. <https://doi.org/10.3389/fendo.2022.919839>
 31. Wenzel, L. (2023). *A Gap Analysis of Falls Prevention on a Medical-Surgical Unit* (Doctoral dissertation, Drexel University).
 32. Wiczorek, P., & Chakravarthy, A. (2025). *Implementing a Fall TIPS Program to Reduce Fall Rates Among Inpatient Adults* (Doctoral dissertation, School of Nursing, University of Maryland at Baltimore).
 33. World Health Organization. (2025). *Step safely: Strategies for preventing and managing falls across the life-course*. WHO Press. <https://www.who.int/publications/i/item/978924002191-4>
 34. Yamada, M., Higuchi, T., Nishiguchi, S., Yoshimura, K., Kajiwar, Y., & Aoyama, T. (2013). Multitarget stepping program in combination with a standardized multicomponent exercise program can prevent falls in community-dwelling older adults: a randomized, controlled trial. *Journal of the American Geriatrics Society*, 61(10), 1669–1675. <https://doi.org/10.1111/jgs.12453>
 35. Yao, S., Zheng, P., Ji, L., Ma, Z., Wang, L., Qiao, L., ... & Wang, H. (2020). The effect of comprehensive assessment and multi-disciplinary management for the geriatric and frail patient: a multi-center, randomized, parallel controlled trial. *Medicine*, 99(46), e22873. DOI: 10.1097/MD.00000000000022873

36. Yan, J., Wang, M., & Cao, Y. (2022). Patterns of multimorbidity in association with falls among the middle-aged and older adults: results from the China Health and Retirement Longitudinal Study. *BMC Public Health*, 22(1), 1814. <https://doi.org/10.1186/s12889-022-14124-6>

fall is not typically an unanticipated accident but rather is more appropriately termed a sentinel event that signals impending failure of one or more of the complexes, interdependent systems that maintain postural stability (Takase, 2023). The statistics are sobering. Falls are the leading cause of fatal and non-fatal injuries in individuals 65 years and older, with great individual health and healthcare system consequences worldwide (World Health Organization, 2025). Direct medical costs of fall-related injury, particularly hip fractures and traumatic brain injury, impose a high economic burden (Wang et al., 2024). But the true burden is far more than that immediate physical damage. A fall can trigger a "post-fall syndrome" of fearfulness, loss of mobility, social isolation, loss of function, and loss of independence, each feeding into a cycle that raises the risk of subsequent falls and institutionalization exponentially (Hazazi, 2025).

Despite the recognized extent of this problem, clinical practice has historically shown a reactive and often short-term approach to post-fall care. The first consideration has too often been limited to the "mechanical" aspect of the fall: diagnosis and treatment of any ensuing fracture or laceration. This is required, but it is grossly insufficient. It does not address the fundamental question: Why did this person fall? A fall is a symptom, not a diagnosis, and treatment needs to be diagnostic, therapeutic, and preventative in intent. The current standard of care is extremely variable and fragmented. The initial response from the nursing staff is not always formally linked to a subsequent thorough medical evaluation, and rehabilitation service referrals are often not initiated or postponed (Stephenson et al., 2016). This fragmented process generates lost opportunities for identifying and managing modifiable hazards, placing patients at risk of having another fall and functional deterioration.

Therefore, this review makes the case for the need for a change of paradigm to an integrated, systematic, and patient-focused post-fall management process. This process must be initiated at the moment of the fall by the nurse's incident report and then continue unimpeded through a comprehensive medical and geriatric assessment, culminating in a firm plan of functional restoration and long-term risk reduction. By adding new 2025 evidence to this article, the framework will specify the key components of each phase of this pathway, emphasizing imperative handoffs and interprofessional teamwork essential for the best results. This article aims to provide a brief,

evidence-based roadmap for clinicians and health care organizations to convert a potentially traumatic experience into an opportunity for thorough evaluation and anticipatory intervention.

The Initial Response and Triage: The Nurse's Important Role

The management process begins the instant that a fall is discovered or reported. The bedside nurse is the one who makes the initial response, and her interventions set everything else into motion. This stage is not necessarily one of completing an incident report for risk management purposes; it is a critical clinical assessment that must balance immediate patient safety against the initiation of a diagnostic process.

Immediate Clinical Assessment and Stabilization

The priority of the nurse at first onset is the physiological stability and immediate safety of the patient. This involves a rapid but also thorough ABCDE (Airway, Breathing, Circulation, Disability, Exposure) like trauma assessment to establish whether or not there are any potentially life-threatening injuries (Quigley, 2020). Concurrently, the nurse must assess the patient's neurological status, e.g., consciousness level and signs of head trauma, without shifting the patient in the event of suspected spinal injury. After the patient is stabilized and safely lifted from the floor using proper lifting equipment and techniques to prevent re-injury to the patient and employees, an extended focused assessment can be initiated (Dunning, 2009).

The Structured Post-Fall Assessment and Incident Report

The incident report must be converted from a simple clerical form to a high-level clinical tool that captures essential data for root cause analysis. An organized post-fall evaluation should be performed at once. This includes a complete history from the patient (if alert) and from witnesses: what they were doing, prodromal symptoms (such as dizziness, palpitations, weakness in the legs), and the precise mechanism (such as tripping, syncope, legs giving way) (Wenzel, 2023). Physical examination must systematically examine for trauma, including careful skin examination for hematomas and abrasions, neurovascular examination of all extremities, and assessment of pain, notably in the head, spine, and hip. Vital signs, including orthostatic blood pressure and heart rate, because orthostatic hypotension is an underappreciated cause of falls (Naccarato et al., 2012). This integrated data collection at the time of care forms the foundation layer upon which all medical workup is based.

The Comprehensive Medical Workup

The information gathered by the nurses should be the direct impetus for a formal medical workup by a physician, advanced practice provider, or geriatrician. This workup encompasses beyond to tackle the reason (the etiology of the falls) and not the result (the injury). The workup is multi-systematic,

assessing the most crucial areas known to be related to fall risk.

Medical History and Medication Reconciliation

A detailed review of history is most crucial. This involves the recognition of chronic disorders that are risk factors for falls, i.e., Parkinson's disease, stroke, peripheral neuropathy, osteoarthritis, cognitive impairment, and depression (Yan et al., 2022). One of the most important, but not utilized to its potential, areas is proper medication reconciliation. Particular attention must be directed to psychotropic medications (benzodiazepines, antipsychotics, antidepressants), antihypertensives, diuretics, anticholinergics, and hypoglycemics, all of which have a high fall risk profile (Seppala et al., 2021). The policy would be to critically evaluate the requirement for each drug, with the intention to deprescribe or reduce the dose wherever the situation demands.

Focused Physical and Neurological Examination

The physical examination must be tailored according to the context of the fall, but needs to include some characteristic features invariably. A cardiovascular examination is essential, focusing on arrhythmias, valvular disease, and, as noted above, orthostatic hypotension (Fedorowski et al., 2019). A musculoskeletal examination ought to examine for strength, particularly of the lower limbs, and joint range of motion and deformities like foot drop. The neurological examination ought to examine peripheral sensation (for neuropathy), proprioception, coordination, and balance. A particular examination of vision and hearing is also required because sensory loss significantly lessens postural stability (Lord & Dayhew, 2001).

Functional and Cognitive Assessment

No workup is complete without taking the measurement of the patient's baseline and current cognitive and functional abilities. Standardized assessment tools are a goldmine here. Morse Fall Scale or Hendrich II Fall Risk Model may be used in risk stratification, but more informative for restoration planning are performance-based measures like the Timed Up and Go (TUG) test, Berg Balance Scale, and gait speed analysis (Barry et al., 2014). Cognitive testing with tools like the Mini-Mental State Examination (MMSE) or Montreal Cognitive Assessment (MoCA) is required, as cognitive impairment is a common, and often reversible, risk for falls, particularly in the context of delirium (Avelino-Silva et al., 2017). Secondly, assessment of the patient's fear of falling on the Falls Efficacy Scale-International (FES-I) is crucial because this measure of the patient's psychological state can be as disabling as a physical impairment (McColl et al., 2022).

Diagnostic Investigations

Diagnostic tests should be ordered on the basis of history and physical examination, and not randomly. Routine laboratory testing is often warranted, including a complete blood count (for

anemia), a comprehensive metabolic panel (for electrolyte imbalance, kidney function, and glucose), thyroid-stimulating hormone, and Vitamin B12 and D levels (Wei et al., 2022). At least an electrocardiogram (ECG) is the minimum to rule out arrhythmias or conduction defects. Further cardiac assessment, such as an echocardiogram or prolonged cardiac monitoring (e.g., with Holter monitoring or implantable loop recorder), is indicated with syncope or arrhythmia (Sheldon et al., 2025). Neuroimaging, such as CT or MRI of the brain, is required for head injury with persistent neurological symptoms or in the case of suspected new central nervous system lesion (Birmingham, 2014). Table 1 and Figure 1 summarize the key components of the integrated post-fall medical evaluation.

Table 1: Key Components of the Integrated Post-Fall Medical Evaluation

Domain	Key Assessment Components	Potential Findings & Implications
Medical History	Chronic conditions (e.g., Parkinson's, stroke, CHF), previous falls, history of syncope.	Identifies predisposing chronic diseases and patterns of recurrent falls.
Medication Review	Comprehensive list of all prescriptions, OTC, and supplements. Focus on psychotropics, antihypertensives, and anticholinergics.	Polypharmacy (≥ 5 meds) and specific drug classes are major modifiable risk factors.
Cardiovascular	Orthostatic vital signs, cardiac auscultation, and ECG. Consider an echocardiogram, a Holter monitor.	Identifies orthostatic hypotension, arrhythmias (e.g., AFib, bradycardia), and structural heart disease.
Neuromuscular	Muscle strength (especially quadriceps), joint ROM, foot inspection, proprioception, and peripheral sensation.	Reveals sarcopenia, arthritis, neuropathy, or other impairments contributing to instability.

Balance & Gait	Observation of gait, Timed Up and Go (TUG) test, Berg Balance Scale, Romberg test.	Quantifies functional impairment, helps target specific deficits in rehabilitation.
Sensory	Visual acuity testing, hearing assessment.	Uncovers sensory deficits that reduce awareness of environmental hazards.
Cognitive & Psychological	Cognitive screen (MoCA, MMSE), assessment for delirium, Fear of Falling (FES-I), and mood.	Identifies dementia/delirium impacting judgment/safety; addresses psychological barriers to mobility.



Figure 1. Components of the Comprehensive Post-Fall Medical Workup

The Interdisciplinary Team

Post-fall complexity is such that it demands an interdisciplinary team (IDT) approach. No one clinician can be asked to explore all the etiologies of a fall and its consequences. The core team should have at least the primary care physician or geriatrician, nursing staff, a physical therapist (PT), an occupational therapist (OT), and a pharmacist (Tsiachristas et al., 2017). Social workers and dietitians are also valuable assets.

The team is supplemented by the physician or geriatrician, who conducts the diagnostic workup, synthesizes data from all members of the team, and

coordinates medical comorbidities. The nurses provide constant observation, implement safety interventions, reinforce education, and provide the team's communication with the patient and family. The physical therapist is crucial in the assessment and treatment of impairments in strength, balance, and gait. They prescribe and manage increasingly difficult exercise programs that are aimed at restoring function (Yao et al., 2020). Occupational therapists prioritize the safety of the patient in accomplishing Activities of Daily Living (ADLs). They assess the home environment (typically by conducting a home safety evaluation), recommend adaptive equipment (such as toilet seats, grab bars), and teach energy conservation techniques (Liu et al., 2018). The pharmacist conducts a thorough medication review, identifies fall-risk-increasing medications, and offers focused deprescribing or alternative treatment options to the prescribing clinician (Alharbi et al., 2025). This group must talk to each other frequently via structured meetings or shared electronic health records to have a single, coordinated care plan.

The Functional Restoration Plan

Having a thorough understanding of the deficits and risks of the patient, the focus now firmly moves away from diagnosis to treatment. The functional restoration plan is the centerpiece of post-fall treatment, individualized to address the specific impairments uncovered by the workup.

Physical Therapy-Guided Exercise Interventions

The cornerstone for functional restoration after a fall is an exercise program guided by physical therapy, concentrated and progressive. Evidence clearly favors multi-component interventions that are carefully designed to the specific assets and deficits of the individual. An intensive program integrates a variety of necessary elements: strength training with focus on the major lower extremity muscles, particularly the quadriceps and hip extensors, to build power necessary for common movements like rising from a chair and climbing stairs (Sherrington et al., 2019); balance training, unavoidable and ranging from simple tandem stands to complex dynamic tasks on various surfaces, with modalities like Tai Chi also having a solid evidence base for promotion of stability and prevention of falls (Wayne et al., 2025); and gait training to normalize abnormal patterns, improve stride length and velocity, and rehearse safe passage through obstacles. Besides this, the physical therapist's role in critically assessing, prescribing, and appropriately fitting an adequate assistive device, i.e., a cane or walker, is of paramount significance as the incorrect device becomes a cause of major falls themselves (Hunter, 2019).

Occupational Therapy and Environmental Modification

The OT facilitates building trust and safety in performing daily living activities. This involves the completion of ADLs like bed-to-chair transfer, bathing, and dressing in supervised, safety-controlled

situations. A pre-discharge home safety assessment, either virtual or in-person, is best practice. The OT may also detect and suggest modifications for risks such as poor lighting, loose mats, messy paths, and a lack of grab bars in the bathroom (Caña-Pino & Pesado-Fernández, 2025). This participatory approach fills the chasm between the clinical setting and the patient's real-life environment.

Cognitive and Psychological Rehabilitation

For cognitively impaired individuals, their rehabilitation plans must be adjusted. This involves providing clear, simple directions, the utilization of memory aids, and routine maintenance. For all patients, fear of falling elimination is a high priority during therapy. Cognitive-behavioral techniques, graded exposure to feared activity (e.g., unassisted walking), and supported success during physical therapy can help disrupt the cycle of fear-avoidance, thereby promoting activity and participation (van Haastregt et al., 2007).

Secondary Prevention and Long-Term Care

A single fall is the best predictor of another fall. Therefore, the acute restorative phase must lead logically into a practical, long-term secondary prevention program, including ongoing supervision and reinforcement.

Creating an Individualized Fall Prevention Plan

The IDT, patient, and family should jointly develop a written, straightforward fall prevention plan before discharge. This plan should enumerate the risk factors identified (e.g., "orthostatic hypotension," "leg weakness"), the specific measures to manage them (e.g., "rise slowly," "do daily exercises," "use walker for all mobility"), and the home environment adaptations to make (Saud Faleh Alanazi, 2024). Having the patient as a cooperative participant in this assignment improves adherence and self-efficacy.

Technology and Remote Monitoring

Emerging technologies offer powerful new instruments for extended management. Wearable sensors and smart home systems can monitor falls, activity levels, and gait and give objective information to clinicians and caregivers, and notify them of a change in a patient's status or a fall event (Mohammed Abu Haddash, 2025). Tele-rehabilitation sites can extend PT and OT services out into the home, providing ongoing care and encouragement and feedback, especially beneficial for rural or transport-limited patients (Gatica-Rojas & Cartes-Velásquez, 2023).

Community Resources and Caregiver Education

Successful long-term care is more than the healthcare system's concern. Providers ought to be aware of and refer the patient to community-based fall prevention interventions such as "Stepping On" or "A Matter of Balance," which involve peer support and regular exercise within a group setting (Yamada et al., 2013). Equally vital is caregiver and family education and support. They need to know the patient's risk

factors, why the care plan is being undertaken, how to support safely without causing dependency, and functional decline signs (Almeida et al., 2024). Table 2 illustrates the seamless post-fall management pathway. Figure 2 illustrates the five-phase interdisciplinary care pathway for post-fall management in older adults.

Table 2: The seamless post-fall management pathway.

Phase of Pathway	Key Personnel	Primary Goals & Interventions
1. Immediate Response & Triage	Bedside Nurse, Nurse Aide	Ensure safety (ABCDE), assess for injury, document fall circumstances, measure orthostatic vitals, and complete a structured incident report.
2. Comprehensive Medical Workup	Physician, Geriatrician, Pharmacist, Nurse	Diagnose fall etiology: detailed history, medication review, physical/neurological/cognitive exam, order & interpret diagnostic tests.
3. Interdisciplinary Care Planning	Entire IDT (MD, RN, PT, OT, PharmD, SW)	Synthesize assessment data, establish shared goals, and develop a unified, patient-centered care plan for restoration and prevention.
4. Functional Restoration	Physical Therapist, Occupational Therapist	PT: Restore strength, balance, gait through targeted exercises; prescribe/fit assistive devices. OT: Retrain ADLs, conduct home assessment, recommend adaptive equipment and environmental modifications.
5. Secondary Prevention & Transition	Entire IDT, Patient, Caregivers, Community Partners	Create & educate on personalized fall prevention plan; arrange follow-up; refer to community programs; implement remote monitoring if appropriate.

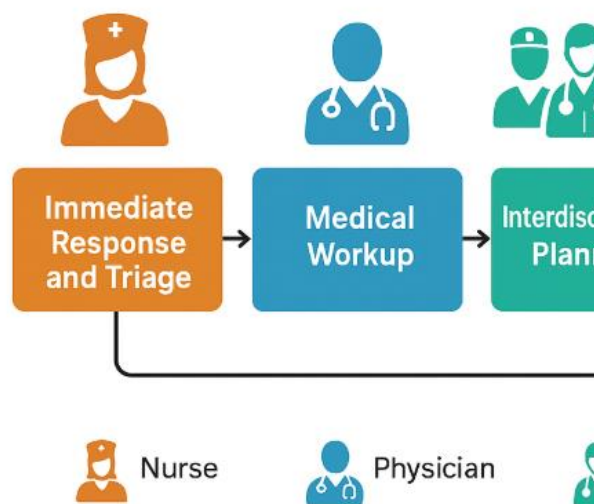


Figure 2. The Seamless Post-Fall Management Pathway.

Discussion

This holistic model of post-fall management is supported by a strong and growing evidence base. But its effective implementation in real clinical practice is being thwarted by significant barriers. These are the time constraints, inadequate personnel, information systems operating in silos that create barriers to communication, lack of reimbursement for certain interdisciplinary services, and resistance to changing entrenched workflows (Parekh et al., 2025). The most daunting one of them is gaining sustained buy-in across all levels of the healthcare organization, including the front-line personnel and top management.

A systematic approach to implementation can overcome such challenges. These also include developing and executing standardized clinical pathways and order sets within the Electronic Health Record (EHR) that can walk clinicians through each step of the post-fall protocol (Wieczorek & Chakravarthy, 2025). Interdisciplinary training and defining clear roles and responsibilities are the foundation of developing effective teamwork. Secondly, healthcare systems should research and advocate for value-based payment systems that financially incentivize high-quality, well-coordinated post-fall care rather than the current fee-for-service model, which is prone to payment for volume rather than outcome (Bowie, 2025).

Follow-up research should focus on refining the most successful components of the functional restoration plan across different subgroups of patients (e.g., those with cognitive impairment vs. those without), examining the cost-effectiveness of technology-based monitoring, and developing implementation science approaches to incorporate these extremely complicated interventions into differing care environments effectively.

Conclusion

A fall is a characteristic, often traumatic event that requires an answer much more sophisticated than just responding to an injury. It offers an opportune moment to interrupt a pattern of decline. This review has addressed a vision of an uninterrupted, seamless continuum that begins with the nurse's skilled initial assessment and continues stepwise through a rigorous, multi-domain medicolegal evaluation, to a customized and proactive plan for functional restoration and secondary prevention. By adopting this patient-centered, interdisciplinary model, health professionals can transform the post-fall period from a reactive, fragmented process into a potent tool for sustaining function, promoting resilience, and preserving the independence and quality of life of our most vulnerable patients.

References

37. Alharbi, S. M., al harish, T. M., Attyah Zead Alqurashi, E., Alsubaie, M. D., Alanazi, N. M., Almutairi, B. A., ... Alsharari, Y. D. D. (2025). Artificial Intelligence and Robotics in Surgery: The Future of Precision Medicine. *Saudi Journal of Medicine and Public Health*, *2*(2), 159–170. <https://doi.org/10.64483/jmph-69>
38. Almeida, A. S., Pagueia, A., & Neves, A. P. (2024). Nursing interventions to empower family caregivers to manage the risk of falling in older adults: A scoping review. *International Journal of Environmental Research and Public Health*, 21(3), 246. <https://doi.org/10.3390/ijerph21030246>
39. Avelino-Silva, T. J., Campora, F., Curiati, J. A., & Jacob-Filho, W. (2017). Association between delirium superimposed on dementia and mortality in hospitalized older adults: A prospective cohort study. *PLoS medicine*, 14(3), e1002264. <https://doi.org/10.1371/journal.pmed.1002264>
40. Bermingham, S. L. (2014). The appropriate use of neuroimaging in the diagnostic work-up of dementia: an economic literature review and cost-effectiveness analysis. *Ontario health technology assessment series*, 14(2), 1. <https://pubmed.ncbi.nlm.nih.gov/24592297/>
41. Barry, E., Galvin, R., Keogh, C., Horgan, F., & Fahey, T. (2014). Is the Timed Up and Go test a useful predictor of risk of falls in community dwelling older adults: a systematic review and meta-analysis. *BMC geriatrics*, 14(1), 14. <https://doi.org/10.1186/1471-2318-14-14>
42. Bowie, J. (2025). *Centers for Medicare and Medicaid No-Pay Policy for Fall Prevention: A Policy Analysis Project* (Doctoral dissertation, Jacksonville University).

43. Caña-Pino, A., & Pesado-Fernández, L. (2025). Occupational Therapy Interventions for Fall Prevention in Older Adults: A Systematic Review of Multimodal Strategies. *Physiologia*, 5(3), 33. <https://doi.org/10.3390/physiologia5030033>
44. Dunning, E. (2009). Implementing a safe patient handling program. *Nursing2020 Critical Care*, 4(2), 44-50. DOI: 10.1097/01.CCN.0000347129.70704.f6
45. Fedorowski, A., Ricci, F., & Sutton, R. (2019). Orthostatic hypotension and cardiovascular risk. *Polish Heart Journal (Kardiologia Polska)*, 77(11), 1020-1027. <https://doi.org/10.33963/KP.15055>
46. Gatica-Rojas, V., & Cartes-Velásquez, R. (2023). Telerehabilitation in low-resource settings to improve postural balance in older adults: a non-inferiority randomised controlled clinical trial protocol. *International Journal of Environmental Research and Public Health*, 20(18), 6726. <https://doi.org/10.3390/ijerph20186726>
47. Hunter, S. W. (2019). Assistive devices, falls, and cognitive aspects. *Falls and Cognition in Older Persons: Fundamentals, Assessment and Therapeutic Options*, 139-150. https://doi.org/10.1007/978-3-030-24233-6_8
48. Hazazi, Y. O. (2025). Strengthening Postpartum Depression Screening and Treatment within Primary Healthcare Centers in Riyadh 1st Cluster. *Saudi Journal of Medicine and Public Health*, *2*(2), 105–113. <https://doi.org/10.64483/jmph-56>
49. Liu, C. J., Chang, W. P., & Chang, M. C. (2018). Occupational therapy interventions to improve activities of daily living for community-dwelling older adults: A systematic review. *The American Journal of Occupational Therapy*, 72(4), 7204190060p1-7204190060p11. <https://doi.org/10.5014/ajot.2018.031252>
50. Lord, S. R., & Dayhew, J. (2001). Visual risk factors for falls in older people. *Journal of the American Geriatrics Society*, 49(5), 508-515. <https://doi.org/10.1046/j.1532-5415.2001.49107.x>
51. McColl, L., Strassheim, V., Linsley, M., Green, D., Dunkel, C., Trundle, H., ... & Parry, S. W. (2022). Falls efficacy scale International (FES-I) as a predictor of gait and balance abnormalities in community dwelling older people. *medRxiv*, 2022-09. <https://doi.org/10.1101/2022.09.29.22280485>
52. Mohammed Abu Haddash, N. A. (2025). Comprehensive Review of the Success of the Hospital-at-Home Program in Today's Healthcare Delivery. *Saudi Journal of Medicine and Public Health*, *2*(2), 45–52. <https://doi.org/10.64483/jmph-31>
53. Naccarato, M., Leviner, S., Proehl, J., Barnason, S., Brim, C., Crowley, M., ... & Papa, A. (2012). Emergency Nursing Resource: orthostatic vital signs. *Journal of Emergency Nursing*, 38(5), 447-453. <https://doi.org/10.1016/j.jen.2012.05.011>
54. Parekh, A., Hill, K. D., & Guerbaai, R. A. (2025). Exploring Post-Fall Management Interventions in Long-Term Care Facilities and Hospitals for Older Adults: A Scoping Review. *Journal of Clinical Nursing*, 34(2), 408-421. <https://doi.org/10.1111/jocn.17546>
55. Quigley, P. A. (2020). Assessing, Managing, and Preventing Falls in Acute Care. *Evidence-Based Geriatric Nursing Protocols for Best Practice*, 375.
56. Saud Faleh Alanazi. (2024). Comparative Evaluation of the Pharmacological Mechanisms, Clinical Indications, and Risk Management Strategies of Epidural Anesthesia in Surgical and Obstetric Interventions. *Saudi Journal of Medicine and Public Health*, *1*(1), 47–57. <https://doi.org/10.64483/jmph-36>
57. Seppala, L. J., Petrovic, M., Ryg, J., Bahat, G., Topinkova, E., Szczerbińska, K., ... & Van der Velde, N. (2021). STOPPFall (screening tool of older persons prescriptions in older adults with high fall risk): a Delphi study by the EuGMS task and finish group on fall-risk-increasing drugs. *Age and ageing*, 50(4), 1189-1199. <https://doi.org/10.1093/ageing/afaa249>
58. Sheldon, R. S., Grubb II, B. P., Olshansky, B., Shen, W. K., Calkins, H., Brignole, M., ... & Kanjwal, K. (2015). 2015 heart rhythm society expert consensus statement on the diagnosis and treatment of postural tachycardia syndrome, inappropriate sinus tachycardia, and vasovagal syncope. *Heart rhythm*, 12(6), e41-e63. <https://doi.org/10.1016/j.hrthm.2015.03.029>
59. Sherrington, C., Fairhall, N. J., Wallbank, G. K., Tiedemann, A., Michaleff, Z. A., Howard, K., ... & Lamb, S. E. (2019). Exercise for preventing falls in older people living in the community. *Cochrane database of systematic reviews*, (1). <https://doi.org/10.1002/14651858.CD012424.pub2>
60. Stephenson, M., Mcarthur, A., Giles, K., Lockwood, C., Aromataris, E., & Pearson, A. (2016). Prevention of falls in acute hospital

- settings: a multi-site audit and best practice implementation project. *International Journal for Quality in Health Care*, 28(1), 92-98.
<https://doi.org/10.1093/intqhc/mzv113>
61. Takase, M. (2023). Falls as the result of interplay between nurses, patient and the environment: using text-mining to uncover how and why falls happen. *International journal of nursing sciences*, 10(1), 30-37.
<https://doi.org/10.1016/j.ijnss.2022.12.003>
 62. Tsiachristas, A., Langhorne, P., Burke, O., Harwood, R. H., Conroy, S. P., Kircher, T., ... & Robinson, D. (2017). Comprehensive geriatric assessment for older adults admitted to hospital. *Cochrane database of systematic reviews*, (9).
<https://doi.org/10.1002/14651858.CD006211.pub3>
 63. van Haastregt, J. C., Zijlstra, G. R., van Rossum, E., van Eijk, J. T., de Witte, L. P., & Kempen, G. I. (2007). Feasibility of a cognitive behavioural group intervention to reduce fear of falling and associated avoidance of activity in community-living older people: a process evaluation. *BMC health services research*, 7(1), 156.
<https://doi.org/10.1186/1472-6963-7-156>
 64. Wang, Z., Zhang, Y., Wu, J., & Zhang, Q. (2024). Global, regional and country-specific burden of patella, tibia or fibula, or ankle fractures and its prediction to 2035: findings from global burden of disease study 2019. *BMC Public Health*, 24(1), 3162.
<https://doi.org/10.1186/s12889-024-20675-7>
 65. Wayne, P. M., Ahn, A., Clark, J., Irwin, M. R., Kong, J., Lavretsky, H., ... & Yeh, G. Y. (2025). The Science of Tai Chi and Qigong as Whole Person Health-Part I: Rationale and State of the Science. *Journal of Integrative and Complementary Medicine*, 31(6), 499-520. <https://doi.org/10.1089/jicm.2024.0957>
 66. Wei, F. L., Li, T., Gao, Q. Y., Huang, Y., Zhou, C. P., Wang, W., & Qian, J. X. (2022). Association between vitamin D supplementation and fall prevention. *Frontiers in endocrinology*, 13, 919839.
<https://doi.org/10.3389/fendo.2022.919839>
 67. Wenzel, L. (2023). *A Gap Analysis of Falls Prevention on a Medical-Surgical Unit* (Doctoral dissertation, Drexel University).
 68. Wiczorek, P., & Chakravarthy, A. (2025). *Implementing a Fall TIPS Program to Reduce Fall Rates Among Inpatient Adults* (Doctoral dissertation, School of Nursing, University of Maryland at Baltimore).
 69. World Health Organization. (2025). *Step safely: Strategies for preventing and managing falls across the life-course*. WHO Press.
<https://www.who.int/publications/i/item/978924002191-4>
 70. Yamada, M., Higuchi, T., Nishiguchi, S., Yoshimura, K., Kajiware, Y., & Aoyama, T. (2013). Multitarget stepping program in combination with a standardized multicomponent exercise program can prevent falls in community-dwelling older adults: a randomized, controlled trial. *Journal of the American Geriatrics Society*, 61(10), 1669-1675.
<https://doi.org/10.1111/jgs.12453>
 71. Yao, S., Zheng, P., Ji, L., Ma, Z., Wang, L., Qiao, L., ... & Wang, H. (2020). The effect of comprehensive assessment and multi-disciplinary management for the geriatric and frail patient: a multi-center, randomized, parallel controlled trial. *Medicine*, 99(46), e22873.
DOI: 10.1097/MD.00000000000022873
 72. Yan, J., Wang, M., & Cao, Y. (2022). Patterns of multimorbidity in association with falls among the middle-aged and older adults: results from the China Health and Retirement Longitudinal Study. *BMC Public Health*, 22(1), 1814.
<https://doi.org/10.1186/s12889-022-14124-6>