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Post-Acute Management of Older Adults Suffering Hip Fractures

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IGFS
International Geriatric Fracture Society

Disclosures

"I have no actual or potential conflict of interest in relation to this program/presentation"

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Objectives

Understanding components of the initial evaluation and plan of care of older hip fracture patients arriving to a skilled nursing facility

Defining general principles of medical management of Post-Acute care of Hip Fracture patients including DVT prophylaxis, pain control, and osteoporosis treatment

Sharing the list of places I am planning to visit in Florida as soon as this madness ends!

Audience Participation

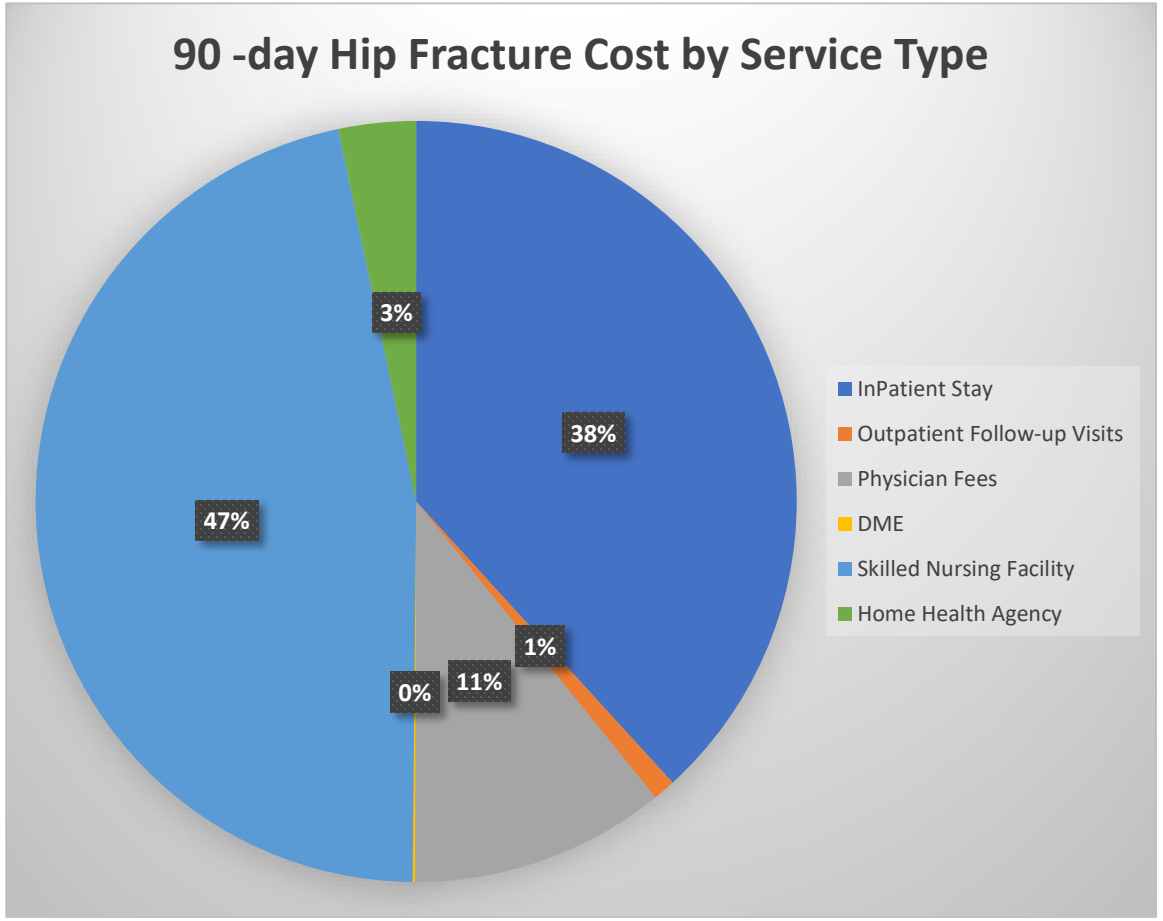
What percentage of the total cost of hip fracture care is spent in nursing home-based post-acute care ?

A. 23 %
B. 35%
C. 47%
D. 62%

Hip Fractures in the US

- As many as 60% of patients developing a new need for assistance with activities of daily living (ADLs)

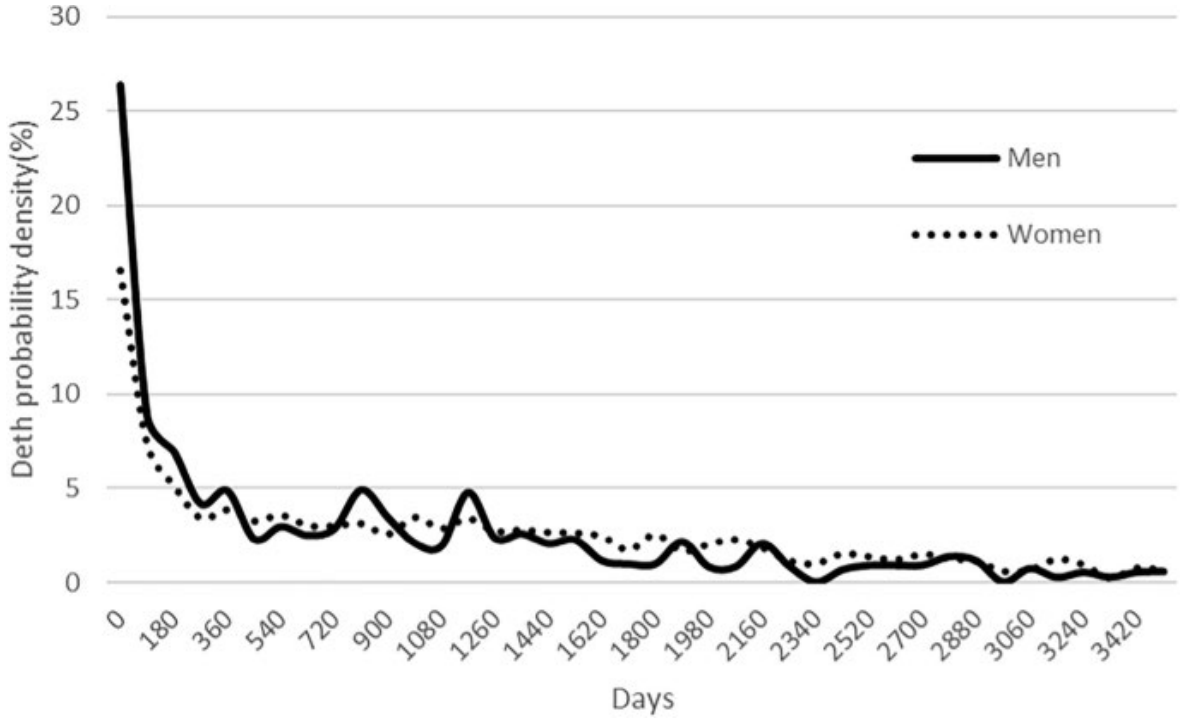
- For the United States, the cost of treating osteoporotic hip fractures is estimated at more than US$5 billion annually.



JP Coral Reef State Park

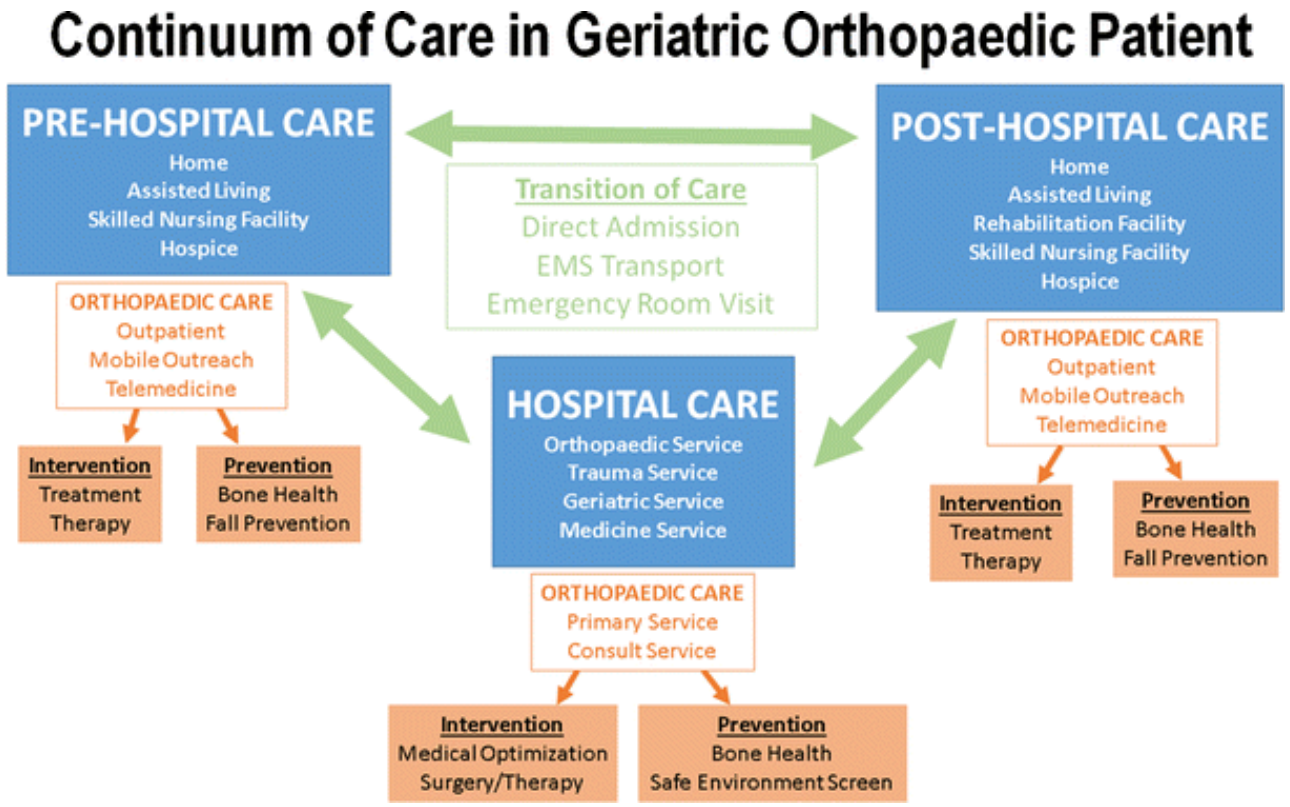
Importance of Standardizing Post-Acute Care

- The majority of patients require some form of PAC after a hip fracture
- Variability in what is considered standard of care
- Morbidity and mortality occur during the post-acute recovery
- There is no established consensus regarding the standards of care provided to hip fracture patients in Nursing Facilities.



the risk of mortality drops significantly over the early post-fracture period (first 6 months)

Continuum of Care



Standards of Care

- Many initiatives have been created to improve outcomes and reduce cost
- Primarily based around the inpatient hospital admission
- Implementation of Geriatric Orthopaedic programs is associated with decreases in time to surgery, length of stay, cost, and complication rates

ELSEVIER

JAMDA

journal homepage: www.jamda.com

Review Article

Effect of Clinical Care Pathways on Quality of Life and Physical Function After Fragility Fracture: A Meta-analysis

Jason Talevski BHealthSci(Public Health)[a,b,*], Kerrie M. Sanders PhD[a,b], Gustavo Duque PhD[a,b], Catherine Connaughton PhD[c], Alison Beauchamp PhD[a,b,d], Darci Green BMedSci(Hon)[a,b], Lynne Millar PhD[a,b], Sharon L. Brennan-Olsen PhD[a,b]

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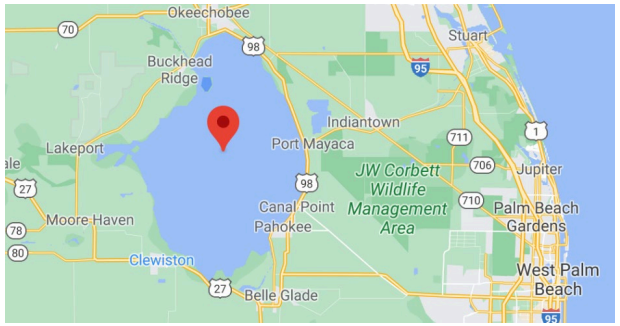
Lake Okeechobee



The Project

A writing group was created by professionals from the Special Interest Group in Geriatric Surgical Co-management of the American Geriatrics Society (AGS), the International Geriatric Fracture Society (IGFS) and selected AMDA members.

Formed by clinicians with expertise in caring for patients with hip fractures, including geriatricians, orthopedic surgeons, and physical therapists.

Members of the group performed literature review independently, which included publications derived from research involving human subjects, published in English (150 articles)

Developed a series of statements to help establish guidance for providers in nursing facilities regarding the standards of care of osteoporotic hip fracture patients.

The Result

Systematic Review

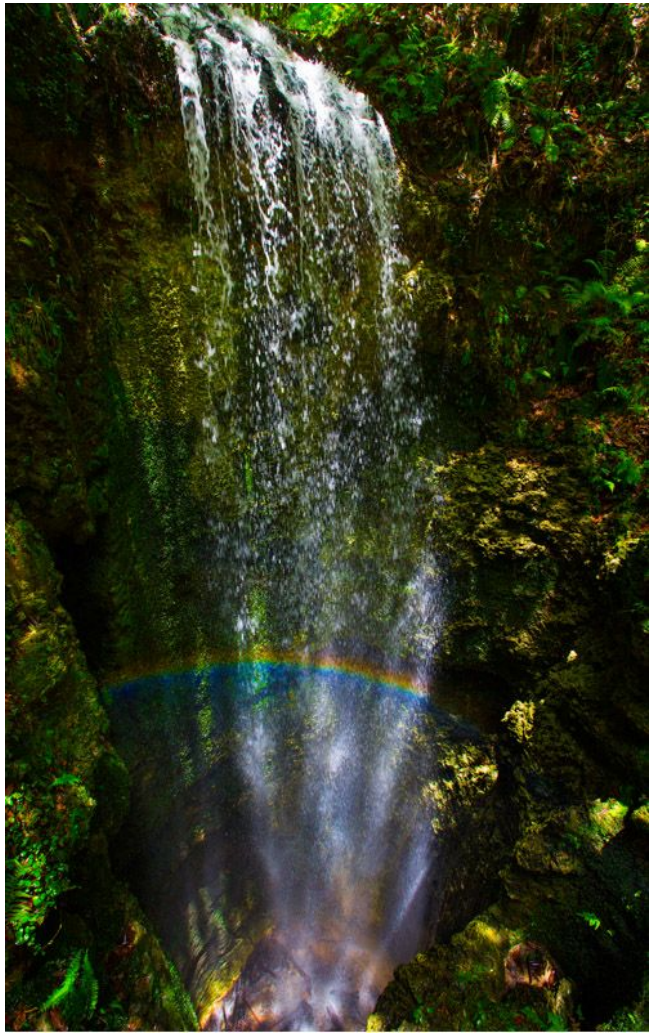
Geriatric Orthopaedic Surgery
& Rehabilitation
Volume 11: 1-15

DOI: 10.1177/2151459320935100
journals.sagepub.com/home/gos
SAGE

Postacute Management of Older Adults Suffering an Osteoporotic Hip Fracture: A Consensus Statement From the International Geriatric Fracture Society

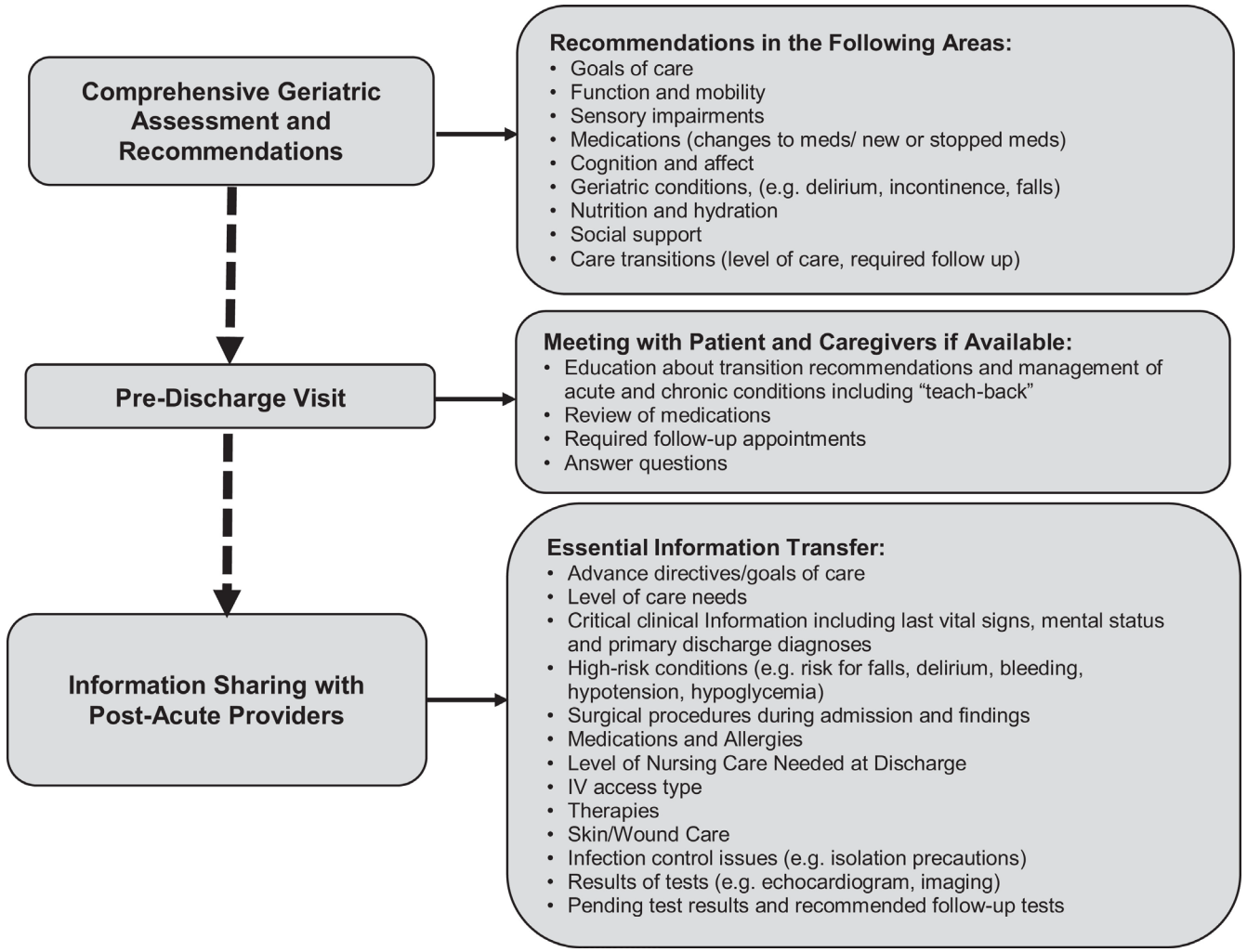
Bernardo J. Reyes, MD[1], Daniel A. Mendelson, MD[2], Nadia Mujahid, MD[3], Simon C. Mears, MD[4], Lauren Gleason, MD[5], Kathleen K. Mangione, PT, PhD[6], Arvind Nana, MD[1], Maria Mijares, MD[1], and Joseph G. Ouslander, MD[1]

Falling Waters State Park



Pre-Hospital Discharge Assessment

Identifying Patient's Needs and Choosing the Right Hospital Discharge Disposition



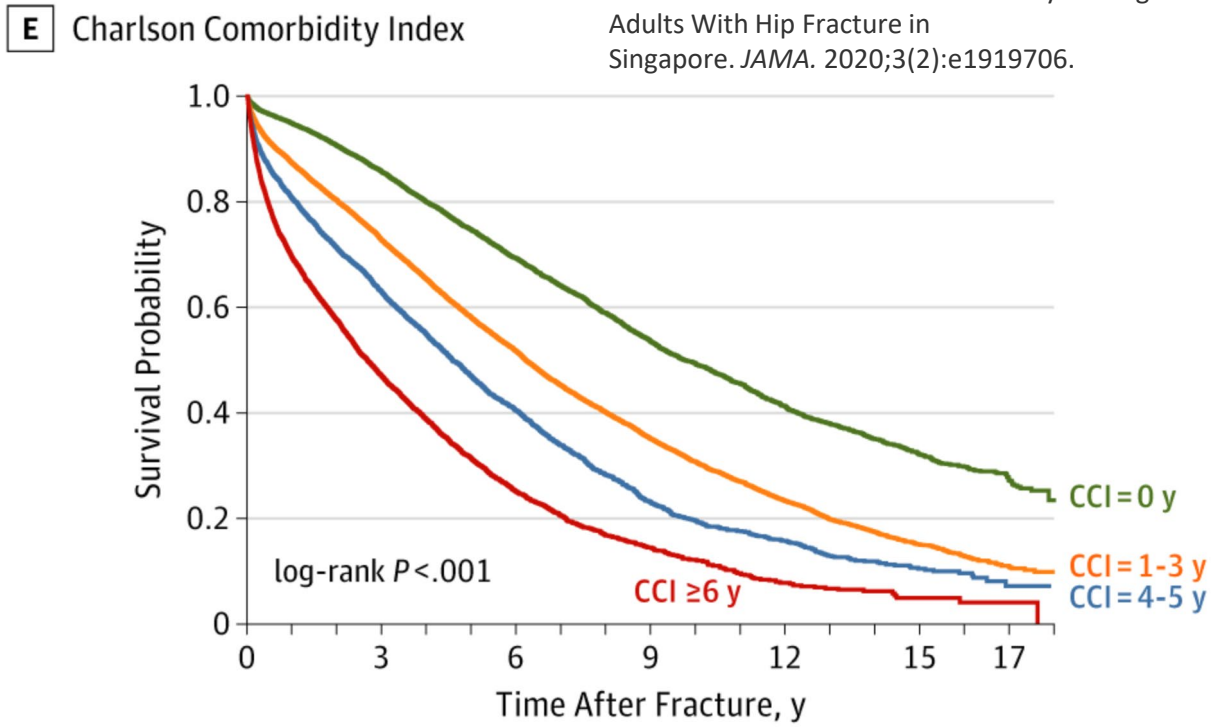
Arrival to Nursing Facility

The initial evaluation of patients in a PAC facility should include a CGA

- **Hospital acquired conditions**
  - PNA,
  - Urinary Retention,
  - Delirium

- **Decompensated chronic medical conditions**
  - CHF
  - COPD
  - HTN
  - DM

Yong E, Ganesan G, Kramer MS, et al. Risk Factors and Trends Associated With Mortality Among Adults With Hip Fracture in Singapore. *JAMA.* 2020;3(2):e1919706.



MORTALITY

Among 36 082 first inpatient admissions for hip fractures

(mean [SD] patient age, 78.2 [10.1] years; 24 902 [69.0%] female; 30 348 [84.1%])

Arrival to Nursing Facility

Physical therapy should start as early as possible after admission to a PAC facility.

- *high intensity lower extremity strength training,*
- *activities that challenge balance*
- *encourage mobility such as rising from a chair, walking, and climbing steps.*
- *education regarding pain related to the process of rehabilitation*

Audience Participation

From those post acute patients suffering delirium at the time of SNF admission, what percentage are hip fracture patients?

A. 5 %
B. 10 %
C. 25 %
D. 45 %

Delirium During SNF Stay

For patients at risk of developing delirium, preventive measures should be in place from the time of admission. The PAC facilities should embed delirium prevention/detection strategies within their daily assessments.

Delirium is present in a substantial portion of patients arriving to PAC facilities and can interfere with rehabilitation activities in patients with hip fracture. ***Up to a 25% of all cases of delirium coming from the hospital are hip fracture patients.***

A modified version of the HELP program for long-term care has been tested in limited PAC settings with success.

PAC facilities should implement delirium reduction programs that can be embedded in the daily workflow of caregivers, especially for patients at higher risk such as those with cognitive impairment

Delirium Prevention (cont.)

Table 4. Common Components of Successful Delirium Prevention Programs.

1.	Pain control
2.	Assessment of bowel/bladder function
3.	Early mobilization
4.	Reorientation
5.	Medication review
6.	Address malnourishment
7.	Avoid dehydration
8.	Managing sleep disorders
9.	Treat vision and hearing impairment
10.	Geriatric medicine consultation
11.	Training of PAC facility staff

Abbreviation: PAC, postacute care.

Systematic Review

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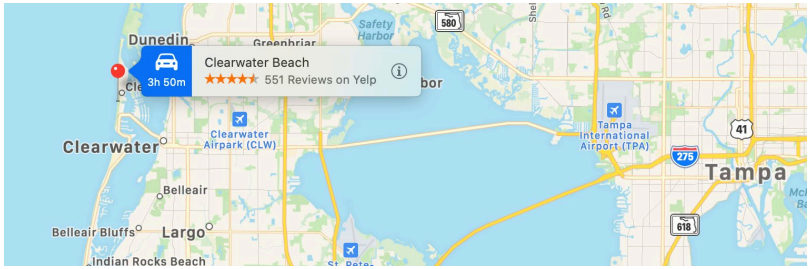
Clearwater Beach



Medication Review

All patients admitted to a PAC facility should undergo a comprehensive medication review and reconciliation that addresses polypharmacy, new medications with stopping dates if applicable, and changes in doses of existing medications due to medical complications occurring the hospital stay.

Hip fracture patients are more likely to have a high number of medications

Polypharmacy also has been associated with worse outcomes in postsurgical hip fracture patients

There is an association between medication review and reconciliation and reduction of future fractures

Must pay special attention to ***preinjury medications that were stopped and/or dose adjusted during the perioperative time due to complications such as hypotension, sedation, or hypoglycemia.***

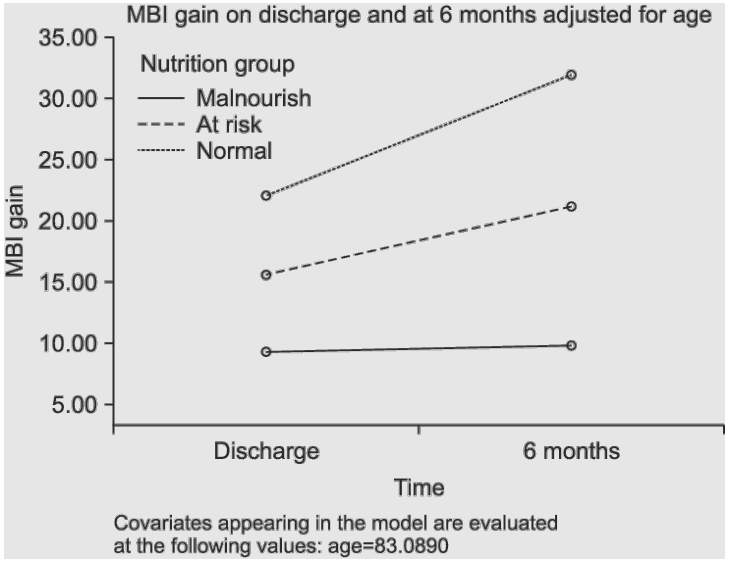
Nutrition

All hip fracture patients should be assessed for malnutrition on arrival to a PAC facility. If they have poor oral intake or malnutrition is identified, high calorie, high protein supplements should be started after assessing for reversible causes.

52.6% at risk of malnutrition and 26.1% malnourished

High risk for malnutrition among patients suffering from delirium, uncontrolled pain, constipation, lack of access to their choice of food, or their dentures.

Malnourishment is related to poor outcomes including poor wound healing, infections, hospital readmissions, development of pressure injuries, and poor functional recovery



Modified Barthel Index (MBI) change among nutritional group on discharge and at 6 months.

Annals of Rehabilitation Medicine 41(6):1005-1012

Bowel and Bladder

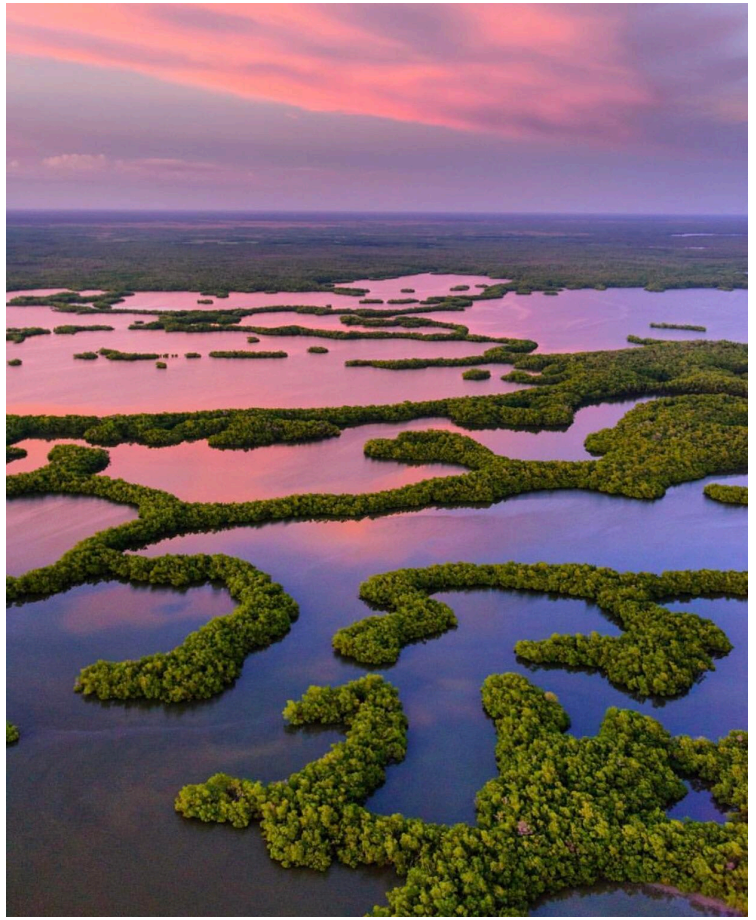
Hip fracture patients should be screened for urinary incontinence at arrival to a post-acute facility and reversible causes should be treated accordantly. All patients should receive medications to prevent constipation unless contraindicated.

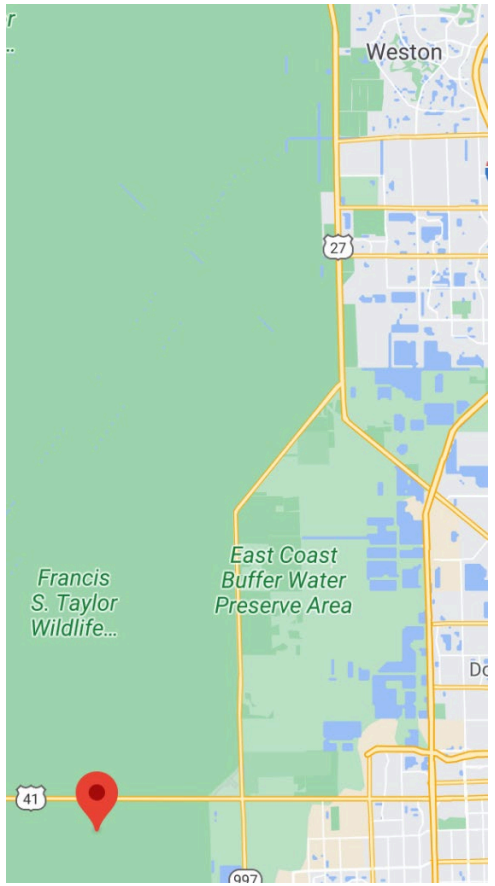
Prevalence of urinary incontinence significantly increased from the preoperative rate of 20% to 43% postoperatively.

Urinary retention with “overflow” incontinence should be considered in any patient who suddenly develops urinary incontinence after hip fracture surgery.

If the patient had the catheter placed for acute urinary retention during the hospitalization, a period of 7 to 10 days of catheterization is appropriate to allow the bladder muscle to recover.

Everglades National Park





Audience Participation

Since the new CDC guidelines were published, what is your level of comfort using opioid medications for hip fracture patients in the SNF setting?

A. I don’t use them
B. They represent the last line of treatment for me
C. I use them only if patients ask for them
D. I have not change how I use them

Pain Control

A multimodal pain regimen should be started in every patient at the time of arrival to a PAC facility. Pain regimen treatments should include nonpharmacologic and pharmacological modalities.

Use of multimodal pain control in the perioperative period for geriatric patients

(AMDA) Clinical Practice Guideline (CPG) for Pain Management in Long-Term Care Setting

Pain can present atypically in the older adults, (restlessness, sleep disturbances, changes in mood, and changes in level of function).

It is important to establish expectations regarding pain control with patients and families to avoid frustration and fear of participating in PT.

Nonpharmacological approaches include application of heat and cold modalities, as well as other techniques such as relaxation, cushioning, and repositioning.

Pharmacological approaches to pain control should include scheduled non-opiate medications, such as topical creams, patches, and scheduled acetaminophen, in addition to as needed opioids if not contraindicated

Audience Participation

When an occlusive dressing should be changed for the first time after a hip fracture patient arrives to a Nursing Facility?

A. Change immediately at arrival
B. Within the first 48 hours
C. Within the first week
D. Do not change it until follow up with orthopedic after discharge from nursing facility.

Surgical Wound Care

An occlusive dressing that is dry should remain in place until staple or suture removal. Any concern for infection should prompt urgent communication with the surgeon.

If an occlusive dressing was changed by a surgeon before hospital discharge, it could be left in place for 2 weeks.

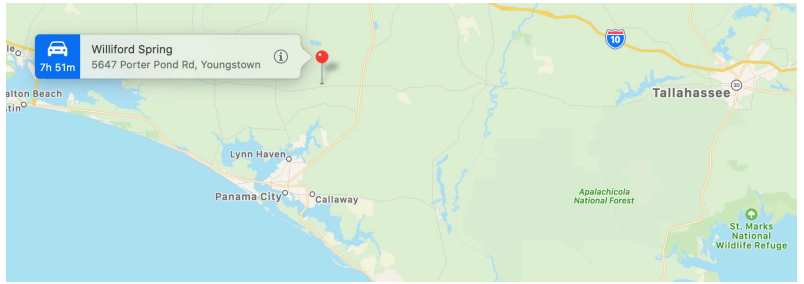
Signs of infection include increased pain and increased drainage. A certain amount of warmth, bruising, or redness may be normal in the immediate postoperative phase. Drainage from a wound typically is minimal of absent in the first few days after surgery.

Wound check by a surgeon is recommended 2 weeks after surgery.[90] This may require a visit to the surgeon's office or where available, telemedicine may be an option

Superficial wound infections or suture abscesses typically happen several weeks after surgery and can be treated with local wound care.

Deep wound infection or deep drainage hematoma require a return trip to the operating room for washout and debridement as well as antibiotics.[91]

Williford Spring



Audience Participation

What is your preferred mode of pharmacologic DVT prophylaxis for hip fracture patients?

A. ASA
B. Enoxaparin (Lovenox)
C. DOAC’s
D. Warfarin
E. Whatever the patient is using in the hospital

DVT Prophylaxis

The risk of venous thromboembolism (VTE) should be assessed on arrival to a PAC facility. Nonpharmacologic and pharmacologic prophylactic measures should be considered depending on the risk of thrombotic events and bleeding. Preferred pharmacologic agents include direct oral anticoagulants (DOACs), aspirin, and low-molecular-weight heparins.

Multifaceted approach to DVT prophylaxis in older adults that takes into consideration risk factors such as heart failure, cancer, and obesity, among others

Low-dose aspirin (160 mg a day) has been demonstrated for a period between 10 and 35 days reductions in pulmonary embolism of 43% and symptomatic deep-vein thrombosis of 29%

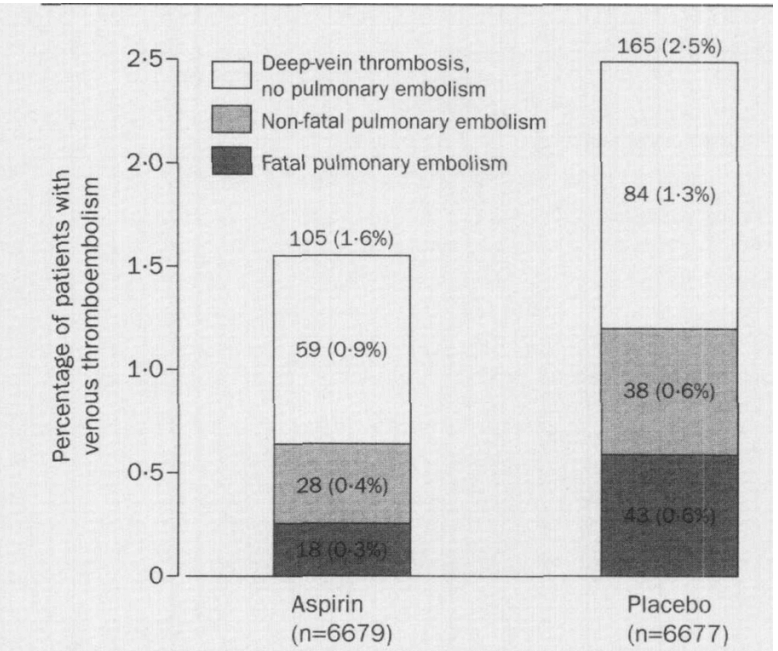


Figure 3: **Absolute effects of aspirin on pulmonary embolism and deep-vein thrombosis after hip fracture**

Apixaban, Rivaroxaban and Dabigatran compared with enoxaparin appear equally effective for the prevention of VTE in elective arthroplasty with Apixaban showing apparent lesser bleeding

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Multifaceted approach to DVT prophylaxis in older adults that takes into consideration risk factors such as heart failure, cancer, and obesity, among others

rivaroxaban for 5 days after arthroplasty followed by extended prophylaxis with aspirin 81 mg for 30 days has shown similar efficacy than extended use of rivaroxaban

Table 3. Primary Effectiveness and Safety Outcomes, According to Surgical Procedure.

Outcome	Total Hip Arthroplasty			Total Knee Arthroplasty		
	Rivaroxaban (N=902)	Aspirin (N=902)	P Value	Rivaroxaban (N=815)	Aspirin (N=805)	P Value
	no. (%)			*no. (%)*		
Venous thromboembolism	5 (0.55)	4 (0.44)	1.00*	7 (0.86)	7 (0.87)	1.00†
Pulmonary embolism	2 (0.22)	2 (0.22)		4 (0.49)	3 (0.37)	
Proximal deep-vein thrombosis	1 (0.11)	1 (0.11)		3 (0.37)	3 (0.37)	
Pulmonary embolism and proximal deep-vein thrombosis	2 (0.22)	1 (0.11)		0	1 (0.12)	
Major bleeding	3 (0.33)	3 (0.33)	1.00	2 (0.25)	5 (0.62)	0.29
All bleeding‡	7 (0.78)	11 (1.22)	0.48	10 (1.23)	11 (1.37)	0.83

* P=0.001 for noninferiority.
† P=0.03 for noninferiority.
‡ This category includes major bleeding and clinically relevant nonmajor bleeding.

LMWH (enoxaparin) continue to be an alternative for DVT prophylaxis

The European Guidelines on Perioperative Venous Thromboprophylaxis recommends a multifaceted approach to DVT prophylaxis in older adults that takes into consideration risk factors such as heart failure, cancer, and obesity, among others

Secondary Prevention of Osteoporosis

Hip fracture patients should be evaluated for future fracture risk using the FRAX score. Basic interventions should include vitamin D repletion, optimization of nutritional status, and lifestyle modification. Patients should be referred to a fracture liaison (if available) or providers with expertise in osteoporosis such as rheumatologists or endocrinologists before being discharged from a PAC facility.

Only a fraction of these patients receive treatment for osteoporosis.

Secondary prevention should be considered even in patients with bone densities outside of the range considered for osteoporosis.

During the PAC facility stay, nutritional status should be assessed, and vitamin D levels should be measured. If not done in the hospital PTH

Due to its complexity, work up for osteoporosis could be deferred to post-NF facility discharge.

Although the quality of the evidence regarding their effectiveness is variable, lifestyle modifications such as exercise and diet should be part of the treatment plan

Closing Statements

- Hip fractures can be a life-changing or life-ending events
- The recovery after a fracture is lengthy, and a relatively high number of patients do not manage to achieve preinjury levels of independence or even survive.
- These statements from leaders in hip fracture care summarize the best available evidence and is intended to help NF manage older hip fracture patients more efficiently and effectively, for overall better outcomes regarding function, quality of life, and minimization of complication that can interfere with optimal recovery.


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Thank you!