

AHA Age Friendly Health System Action Community

Mobility Assessment and Action

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AFHS Safe Mobility: Hospital

- **Screen for mobility** - If you do not have an existing tool, try Timed Up & Go (TUG)
- **Ensure early and safe mobility**
 - Assess & manage impairments (e.g. pain; strength, balance, or gait)
 - Physical therapy if needed
 - Avoid high risk medications;
 - Remove tethers (e.g. catheters, IV lines, telemetry as soon as possible)
- Set and meet a daily mobility goal with each older adult

AFHS Safe Mobility: Ambulatory

- **Screen for mobility:** If don't have an existing tool, try Timed Up & Go (TUG)
- Assess & manage impairments (e.g., pain; strength, balance, or gait)
- Avoid high risk medications; remove catheters, including
- Physical therapy if needed
- Support a home environment that is safe for mobility
- Support older adults to identify a daily mobility goal that supports What Matters
- Review and support progress toward the mobility goal

Mobility Assessment and Action

- Why (Safe) Mobility is one of the 4Ms
- Hospital setting
 - Ways to assess
 - Interventions
 - Our experiences and challenges
- Ambulatory setting
- Your approaches, challenges, questions, suggestions

Why is mobility assessment and action important?

- Overwhelming evidence of negative consequences of decreased mobility
- Central to ability to perform activities of daily living and basic needs
- Assessments can be performed without adding significant burden that will allow institutions to assess mobility
- Interventions that can be done without significant burden that can encourage mobility

Why mobility assessment & action important in hospital

- Spend 95% of time in bed or chair Brown, JAGS 2009; Brown CJ, 2004
- ↓ muscle mass & strength → deconditioning → most common cause of delay in discharge
- ↓ ADLs and ↑ NH admission adjusting for illness severity
- Linked to pressure ulcers, venous stasis, ↓ function & mobility, ↑ LOS, early readmission
- 30 to 60% older adults lose function during hospital stay
 - 1/3 not recover ADL function at 1 year Boyd, JAGS 2008
 - Leads to post-acute and long-term institutionalization

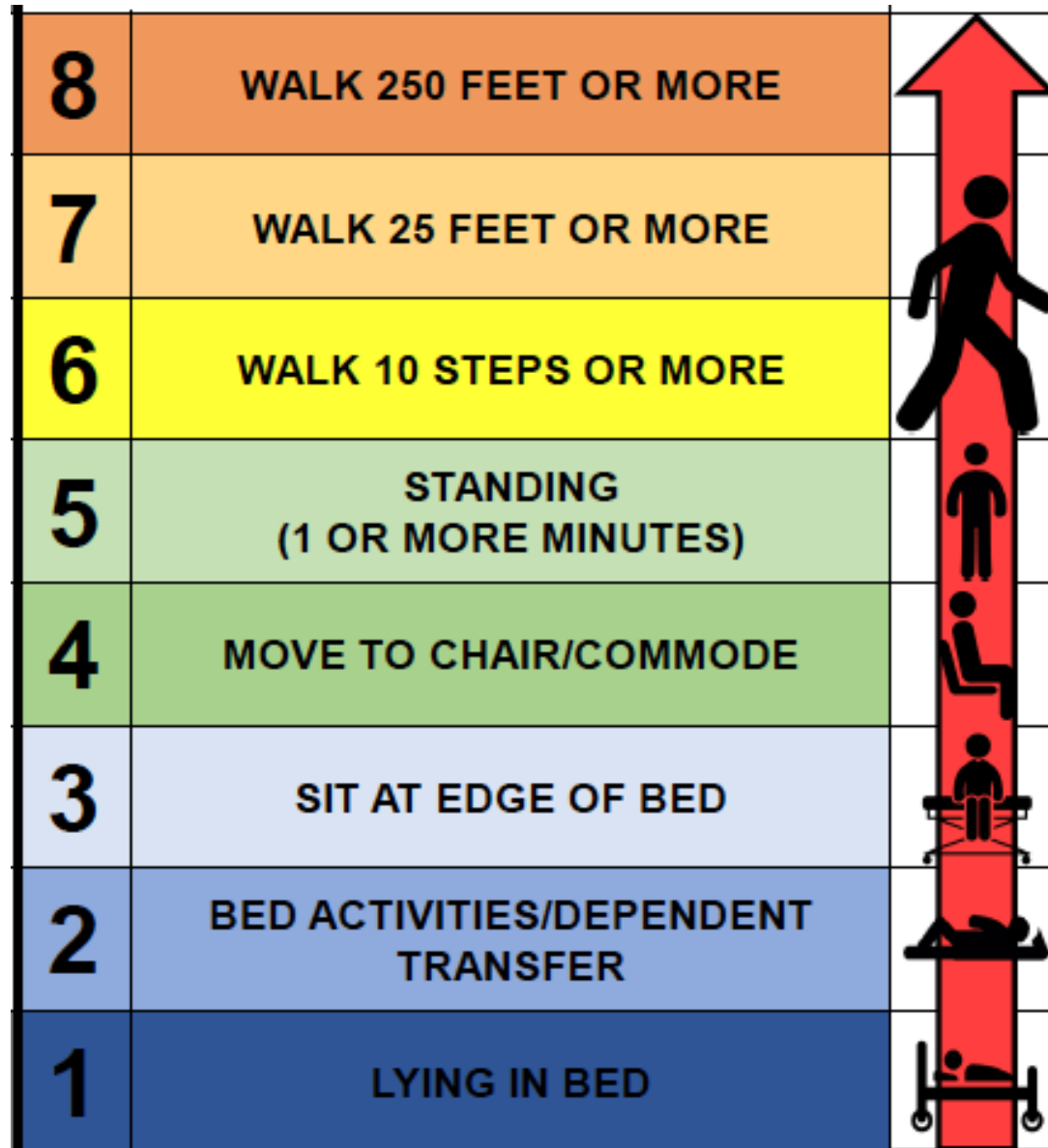
Why safe mobility rather than fall prevention?

- Unintended consequences of (CMS) focus on fall (injury) (Growden, JAMA Int Med 2017)
- Foster “simple” but ineffective,? harmful, unethical interventions
 - Alarms restrict mobility → can lead to aggression & infringes upon rights and dignity
- Most effective fall prevention include ↑ mobility
- Adverse effect of immobility > benefits of fall injury prevention

Examples of Mobility Assessments in Hospital

- AMPAC
- Banner Mobility Assessment Tool
- Hierarchical Assessment of Balance and Mobility (HABAM)
- de Morton Mobility Index (DEMMI)
- TUG or Get Up and Go

Johns Hopkins Highest Level of Mobility (JH-HLM)



Banner Mobility Assessment Tool (BMAT)

- Assessment Level 1 – **Sit and Shake**
- Assessment Level 2 – **Stretch and Point**
 - stretch leg, straighten knee, bend the ankle, point toes
- Assessment Level 3 – **Stand**
 - Rise from bed or chair to standing position
 - Can use assist device
- Assessment Level 4 – **Walk**
 - March in place and advance step

BMAT

Banner Mobility Assessment Tool for nurses

Nurses have found that the Banner Mobility Assessment Tool (BMAT) is an effective resource for performing a bedside assessment of patient mobility.

Test	Task	Response	Fail = Choose most appropriate equipment/device(s)	Pass
Assessment Level 1 Assessment of: <ul style="list-style-type: none"> • Trunk strength • Seated balance 	Sit and shake: From a semi-reclined position, ask patient to sit upright and rotate* to a seated position at side of bed; <i>may use bedrail</i> . Note patient's ability to maintain bedside position. Ask patient to reach out and grab your hand and shake, making sure patient reaches across his/her midline.	Sit: Patient is able to follow commands, has some trunk strength; caregivers may be able to try weight-bearing if patient is able to maintain seated balance longer than 2 minutes (without caregiver assistance). Shake: Patient has significant upper body strength, awareness of body in space, and grasp strength.	MOBILITY LEVEL 1 <ul style="list-style-type: none"> • Use total lift with sling and/or repositioning sheet and/or straps. • Use lateral transfer devices, such as roll board, friction-reducing device (slide sheets/tube), or air-assisted device. Note: If patient has strict bed rest or bilateral non-weight-bearing restrictions, do not proceed with the assessment; patient is MOBILITY LEVEL 1.	Passed Assessment Level 1 — Proceed with Assessment Level 2.
Assessment Level 2 Assessment of: <ul style="list-style-type: none"> • Lower extremity strength • Stability 	Stretch and point: With patient in seated position at side of bed, have patient place both feet on floor (or stool) with knees no higher than hips. Ask patient to stretch one leg and straighten knee, then bend ankle/flex and point toes. If appropriate, repeat with other leg.	Patient exhibits lower extremity stability, strength and control. May test only one leg and proceed accordingly (e.g., stroke patient, patient with ankle in cast).	MOBILITY LEVEL 2 <ul style="list-style-type: none"> • Use total lift for patient unable to weight-bear on at least one leg. • Use sit-to-stand lift for patient who can weight-bear on at least one leg. 	Passed Assessment Level 2 — Proceed with Assessment Level 3.
Assessment Level 3 Assessment of: <ul style="list-style-type: none"> • Lower extremity strength for standing 	Stand: Ask patient to elevate off bed or chair (seated to standing) using assistive device (cane, bedrail). Patient should be able to raise buttocks off bed and hold for a count of five. May repeat once. Note: Consider your patient's cognitive ability, including orientation and CAM assessment if applicable.	Patient exhibits upper and lower extremity stability and strength. May test with weight-bearing on only one leg and proceed accordingly (e.g., stroke patient, patient with ankle in cast). If any assistive device (cane, walker, crutches) is needed, patient is Mobility Level 3.	MOBILITY LEVEL 3 <ul style="list-style-type: none"> • Use non-powered raising/stand aid; <i>default to powered sit-to-stand lift if no stand aid is available.</i> • Use total lift with ambulation accessories. • Use assistive device (cane, walker, crutches). Note: Patient passes Assessment Level 3 but requires assistive device to ambulate or cognitive assessment indicates poor safety awareness; patient is MOBILITY LEVEL 3.	Passed Assessment Level 3 AND no assistive device needed — Proceed with Assessment Level 4. Consult with physical therapist when needed and appropriate.
Assessment Level 3 Assessment of: <ul style="list-style-type: none"> • Standing balance • Gait 	Walk: Ask patient to march in place at bedside. Then ask patient to advance step and return each foot. Patient should display stability while performing tasks. Assess for stability and safety awareness.	Patient exhibits steady gait and good balance while marching and when stepping forward and backward. Patient can maneuver necessary turns for in-room mobility. Patient exhibits safety awareness.	MOBILITY LEVEL 3 If patient shows signs of unsteady gait or fails Assessment Level 4 , refer back to MOBILITY LEVEL 3 ; patient is MOBILITY LEVEL 3.	MOBILITY LEVEL 4 MODIFIED INDEPENDENCE Passed = No assistance needed to ambulate; use your best clinical judgment to determine need for supervision during ambulation.

Always default to the safest lifting/transfer method (e.g., total lift) if there is any doubt about the patient's ability to perform the task.

Hierarchical Assessment of Balance and Mobility (HABAM)

- Balance
- Transfers
- Mobility

HIERARCHICAL ASSESSMENT OF BALANCE AND MOBILITY©

PATIENT ID

Date of admission to hospital ____ DD/____ MM/____ YY

Ward _____

Recorder's Initials																				
Date Assessed (DD)	(MM)																			
Score	Day	-14	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
BALANCE																				
21	Stable ambulation																			
14	Stable dynamic standing																			
10	Stable static standing																			
7	Stable dynamic sitting																			
5	Stable static sitting																			
0	Impaired static sitting																			
TRANSFERS																				
18	Independent and Vigorous																			
16	Independent																			
14	Independent but slow																			
12	1 person standby																			
11	1 person minimal assistance																			
7	1 person assist																			
3	2 person assist																			
0	Total lift																			
MOBILITY																				
28	Unlimited, vigorous																			
26	Unlimited																			
25	Limited >50m, no aid																			
21	Unlimited, with aid																			
19	Unlimited with aid, slow																			
18	With aid, limited >50m																			
16	Needs aid, limited 8-50m																			
15	Needs aid 8-50m																			
14	With aid, limited <8m																			
12	1 person standby +/- aid																			
9	1 person hand support																			
7	Lying sitting independently																			
4	Positions self in bed																			
0	Needs positioning in bed																			
Notes																				

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Evidence from mobilization programs

- RCT: Mobility Program; Brown, JAMA Int Med, 2016
- Intervention: Twice daily assisted ambulation (15-20 minutes) + goal setting + mobility barriers
- Outcome: 1-month post hospital Life Space Assessment* (frequency, duration, distance)
- Results:
 - LSA: MP (52.5) vs. UC (41.6) (P =.02)
 - Falls: 0 in MP group vs. 3 in UC group

*predicts death, nursing home admissions, hospitalization

Evidence from mobilization programs

Study	Intervention	Results
Initial RCT; Mundy Chest, 2003	Early mobilization	↓ LOS 1.1 day vs. UC
Follow-up RCT: STRIDE; Hastings, JAGS, 2014	Supervised walking program (early mobility)	% DC home, 92% vs. 74% UC; p=.007
Scale to 8 VAs; Hastings, Geriatrics, 2018	Buy-in of leaders & staff; fidelity (early mobility; ≥ 20 min./day)	<u>Lessons learned</u> : Flexible staffing; competency checklist for staff training; EHR template(patient enrollment, walk distance & time, monitor progress, troubleshoot)

Evidence from mobilization programs

- Review: 26 studies; Smart et al. Gerontol Geriatr Med, 2018
 - 6 nurse led, 5 PT led, 14 interdisciplinary (nurse, MD, PT, CNA)
- Conclusion: Mobility programs involving multiple disciplines, monitoring, & documentation of patient activity most effective

Evidence from Fall Prevention Programs

Systematic Review (Cochrane): 24 Studies, Cameron, 2018

Intervention	Fall risk reduction	Quality (No. trials)
Additional physiotherapy (supervised exercises)	0.36 (95% CI 0.14 - 0.93)	Very low-quality → uncertain effect (2)
Bed & chair alarms	0.93 (0.38-2.24)	Very low-quality → uncertain effect (3)

Evidence from Fall Prevention Programs

Study	Intervention	Results
6-PACK	Care bundle: alarms, alerts, etc. no mobility)	Fall Rate: 1.04 (0.78-1.37) Injury Rate: 0.96 (0.72-1.27)
Systematic review	Bedrails	No studies found Marques, JBI Database 2017
FallSafe:QI Sustainability, Healey Age and Ageing, 2014	Care bundle: Postural BP; ↓ night time sedation, fall risk assessment; footwear, medication review	Fall rate: 0.75 (0.68–0.84) Injurious fall rate: 0.86 (95% CI 0.71–1.03)
Meta-analysis: Multicomponent delirium prevent.	Cognition, early mobility, hearing, sleep hygiene, vision, hydration	Fall rate: 0.38 (0.25-0.60) (2/4 early mobility) Hshieh. JAMA Int Med. 2015

Are these approaches cost effective?

- FallSafe: multifactorial approach is cost-effective if costs are $<£100$ per patient & $\geq 15\%$ reduction in fall rate. Fall Safe costs $<£700$ / unit / month (well within threshold)
- Delirium prevention: very cost effective so addition of \downarrow falls & \uparrow mobility only enhances their cost effectiveness
- Doesn't require many hospital days saved to pay for mobilization

YNHH Mobility Story

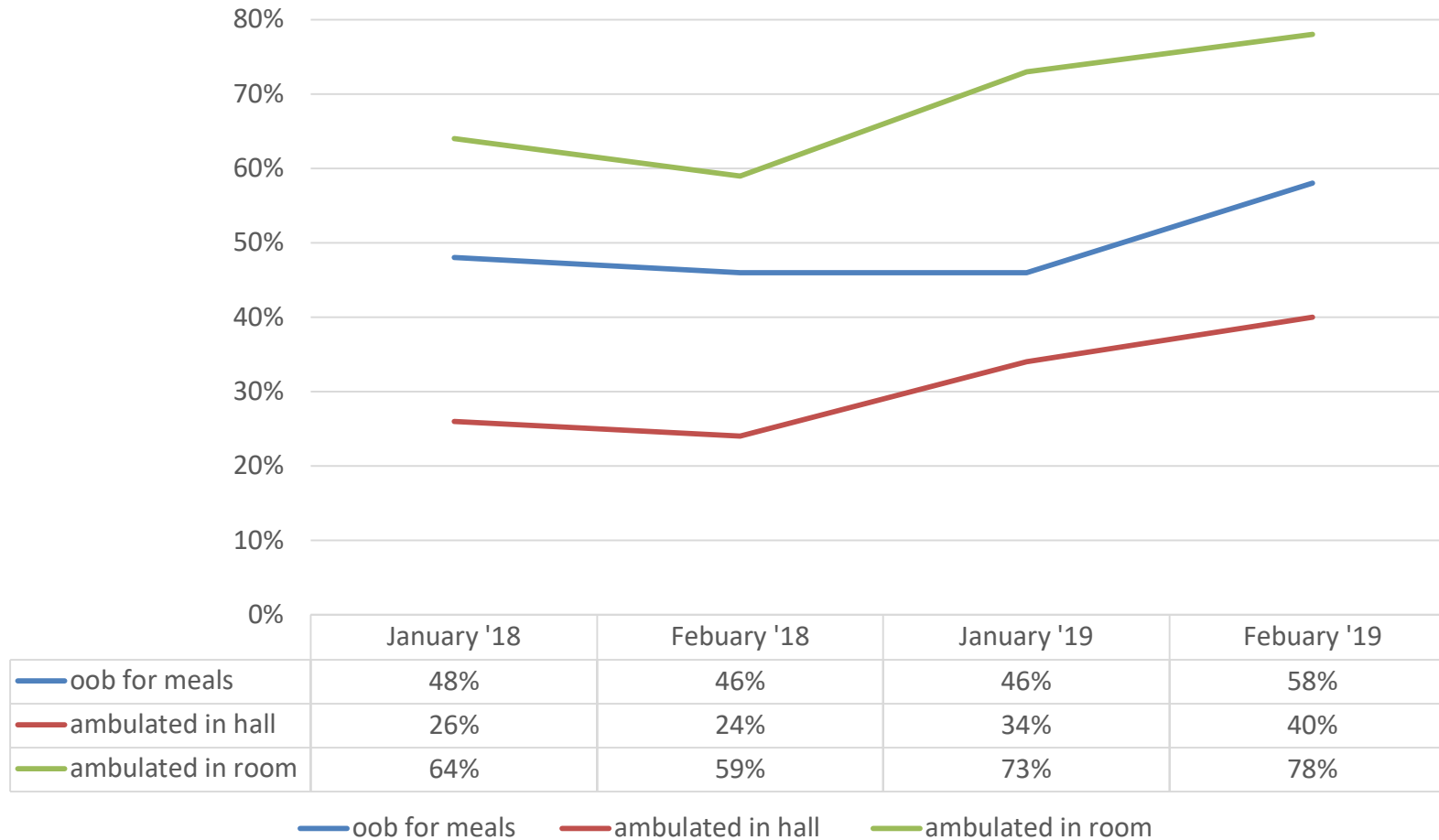
- **Pre AFHS**

- Overwhelming emphasis on fall prevention with focus on alarms, slippers, placards, bedrest orders, Fall Committee
- Early mobility in ICU

- **Peri and post AFHS**

- Began measuring on ACE unit
- Institute AMPAC on 4 units
- Avoid bedrest order as default
- Gradual..... spread of early mobility across units
- Change falls committee to safe mobility committee

YNHH Ace unit Jan/ Feb 2018 vs Jan/ Feb 2019 Mobility



Mobility/Safety Technician



Increasing Mobility via In-hospital Ambulation Protocol Delivered by Mobility Technicians: A Pilot Randomized Controlled Trial. *J. Hosp. Med* 2019;5;272-277.

Mobility Assessment & Action: My suggestions

Hospital:

- Pick a screen that is quick & easy (and staff will do)
- Measure, track, and display mobility (frequency & distance)
- Earlier mobility the better
- Multicomponent delirium prevention (Sensory, mobility, avoid meds, remove tethers, sleep promotion) = fall prevention & safe mobility (all 4Ms in 1)
- Need culture change
 - Falls Committee becomes Safe Mobility Committee
 - Champions on every inpatient unit
 - Education for nursing and technicians
 - Patients & families demand

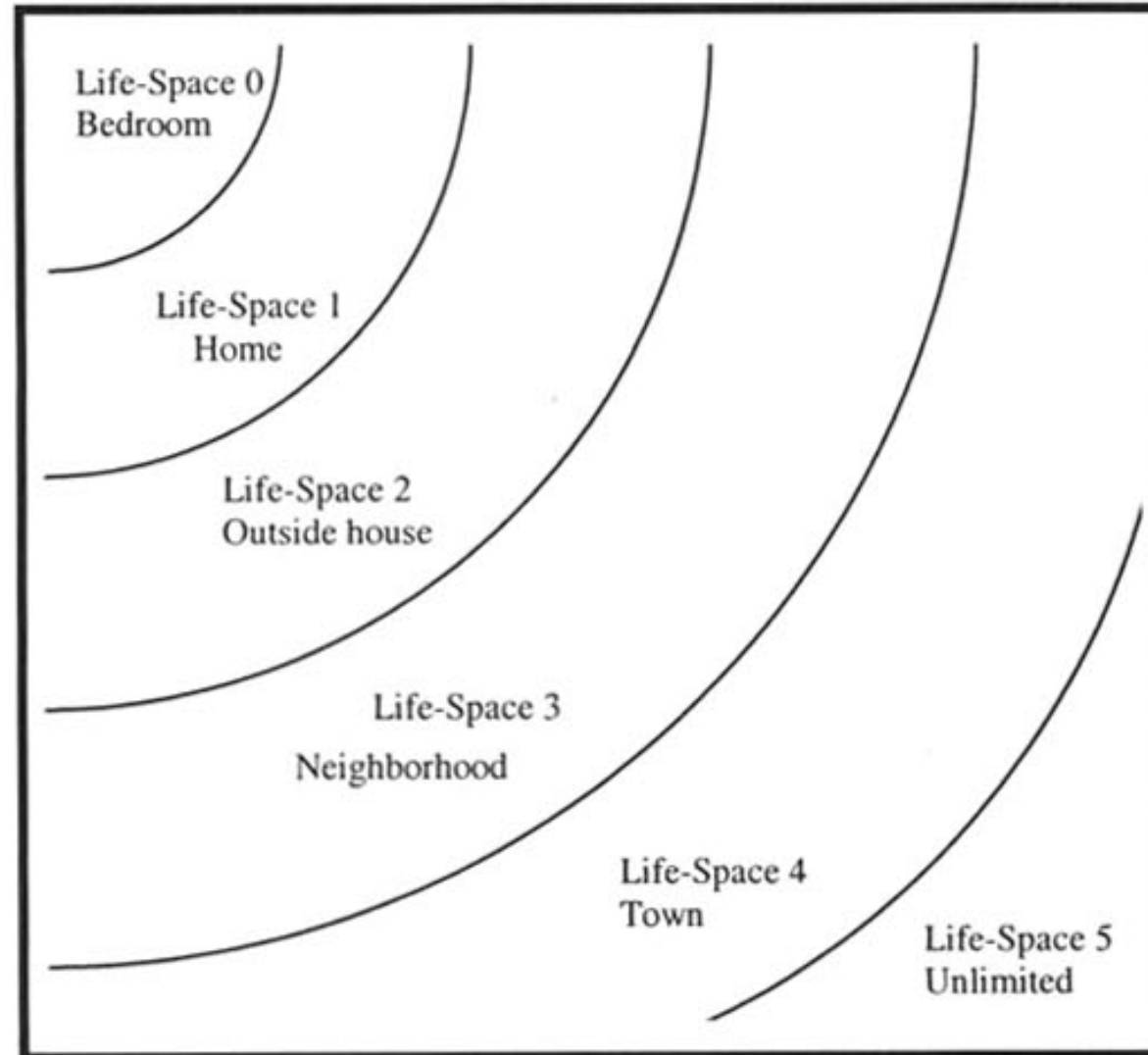
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What Matters
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Examples of Assessment of Mobility in Community

- Extent of mobility
 - Life Space Assessment
 - Parker
- Assess balance & gait
 - Get up and Go; Timed up and Go
 - Performance oriented mobility assessment

Life-space assessment (LSA)



UAB study of aging life-space assessment



Name:				Date:			
These questions refer to your activities just within the past month							
Life-space level		Frequency			Independence		Score
During the past four weeks, have you been to...		How often did you get there?			Did you use aids or equipment? Did you need help from another person?		Level X Frequency X Independence
Life-space level 1... Other rooms of your home besides the room where you sleep?	Yes 1	No 0	Less than 1 /week 1	1-3 times /week 2	4-6 times /week 3	Daily 4	1 = personal assistance 1.5 = equipment only 2 = no equipment or personal assistance Level 1 score
Score: _____ X _____ X _____ =							
Life-space level 2... An area outside your home such as your porch, deck or patio, hallway (of an apartment building) or garage, in your own yard or driveway?	Yes 2	No 0	Less than 1 /week 1	1-3 times /week 2	4-6 times /week 3	Daily 4	1 = personal assistance 1.5 = equipment only 2 = no equipment or personal assistance Level 2 score
Score: _____ X _____ X _____ =							
Life-space level 3... Places in your neighborhood, other than your own yard or apartment building?	Yes 3	No 0	Less than 1 /week 1	1-3 times /week 2	4-6 times /week 3	Daily 4	1 = personal assistance 1.5 = equipment only 2 = no equipment or personal assistance Level 3 score
Score: _____ X _____ X _____ =							
Life-space level 4... Places outside your neighborhood, but within your town?	Yes 4	No 0	Less than 1 /week 1	1-3 times /week 2	4-6 times /week 3	Daily 4	1 = personal assistance 1.5 = equipment only 2 = no equipment or personal assistance Level 4 score
Score: _____ X _____ X _____ =							
Life-space level 5... Places outside your town?	Yes 5	No 0	Less than 1 /week 1	1-3 times /week 2	4-6 times /week 3	Daily 4	1 = personal assistance 1.5 = equipment only 2 = no equipment or personal assistance Level 5 score
Score: _____ X _____ X _____ =							
Total score (add)							Sum of levels

Parker Mobility Score

Table I. Assessment of mobility before the fracture. Score is the total, 0 to 9

Mobility	No difficulty	With an aid	With help from another person	Not at all
Able to get about the house	3	2	1	0
Able to get out of the house	3	2	1	0
Able to go shopping	3	2	1	0

Mobility Assessment & Action: My suggestions

Ambulatory:

- Pick a screen that is quick & easy (Annual wellness visit)
- Multicomponent (e.g. STEADI www.cdc.gov/steady/index.html)
 - PT-balance, gait, strength, assistive device, environment
 - Nurse/MD- risk medications, postural BPs, chronic conditions
- Tie mobility goal to What Matters (*if you were able to walk, get around more safely, what would you want to do more of?; what would you most want to do more as a result of your therapy?*)