Staying 'STEADI' in Arkansas - Lessons learned and recommendations on community-based fall risk screening, assessment, and fall prevention

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Session Learning Objectives

1. List the 3 key screening questions for fall risk in older adults

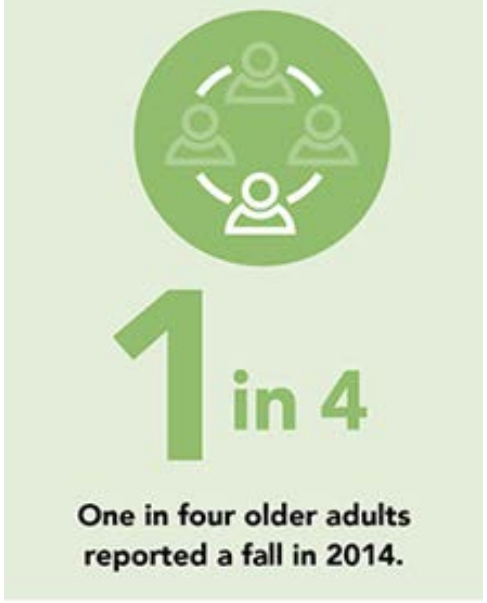
2. Access materials for professionals and older adults on the STEADI website.

- 3. Develop a plan for implementation of fall risk screening specific to their community.

CONTENT

- ✓ Falls
- ✓ Background and introduction to the STEADI
- ✓ Research in Press
- ✓ Our experience with the STEADI
  - As a physical therapist, nurse, and educators
  - Discussion
  - implementation

Every second an older adult suffers a fall



Falls are the leading cause of injury and death among older Americans

Falls cost Medicare more than $31 billion/year

STEADI Stopping Elderly Accidents, Deaths & Injuries

www.cdc.gov/steadi

Arkansas

- Ranks LAST in America's Health Rankings for Falls
- HIGHEST rate in nation at 34.3%.

- High rate of physical inactivity – 37.4% - ranks 47/50

RISK FACTORS MULTIFACTORIAL

INTRINSIC | Factors

- Advanced age
- Previous falls
- Muscle weakness
- Gait & balance problems
- Poor vision
- Postural hypotension
- Chronic conditions including arthritis, stroke, incontinence, diabetes, Parkinson's, dementia
- Fear of falling

EXTRINSIC | Factors

- Lack of stair handrails
- Poor stair design
- Lack of bathroom grab bars
- Dim lighting or glare
- Obstacles & tripping hazards
- Slippery or uneven surfaces
- Psychoactive medications
- Improper use of assistive device

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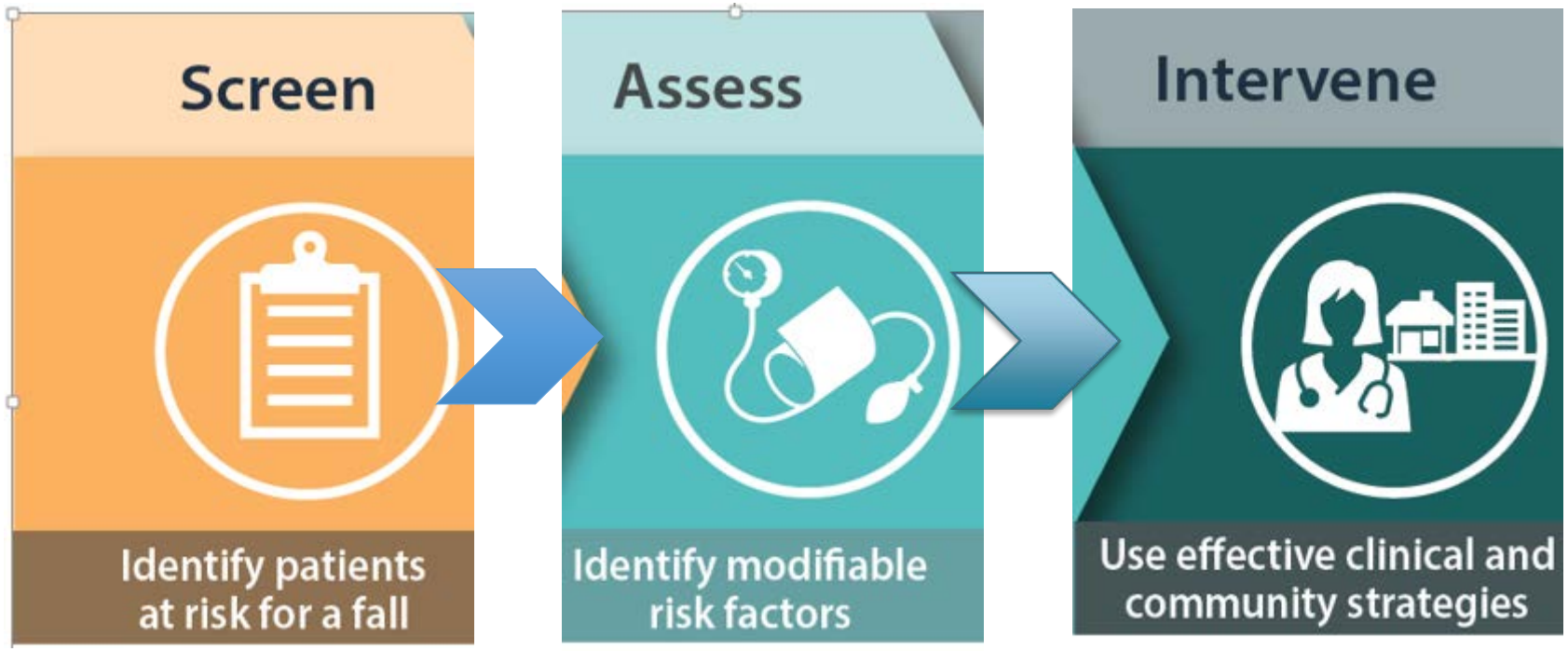
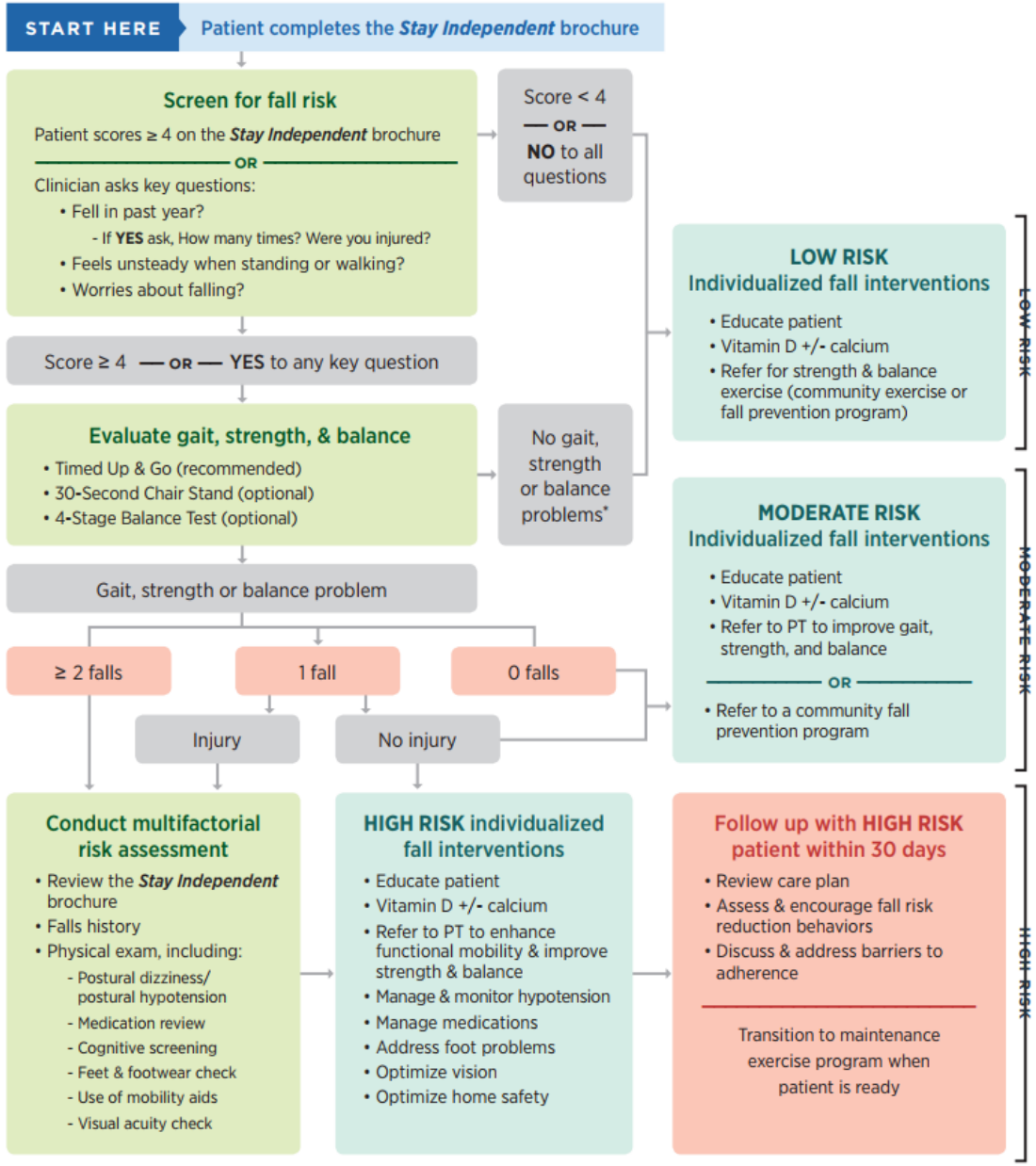


Origin of the STEADI

- American Geriatrics Society/British Geriatrics Society CPG (AGS/BGS 2010; Stevens & Phelan, 2013)
- Fall Risk Questionnaire (FRQ; Rubenstein et al., 2011)
- Originally designed for PCPs to identify and manage fall risk
- Physical therapists and nurses use it to conduct community screenings/fall risk assessments

Algorithm for Fall Risk Screening, Assessment, and Intervention



*For these patients, consider additional risk assessment (e.g., medication review, cognitive screen, snycope).

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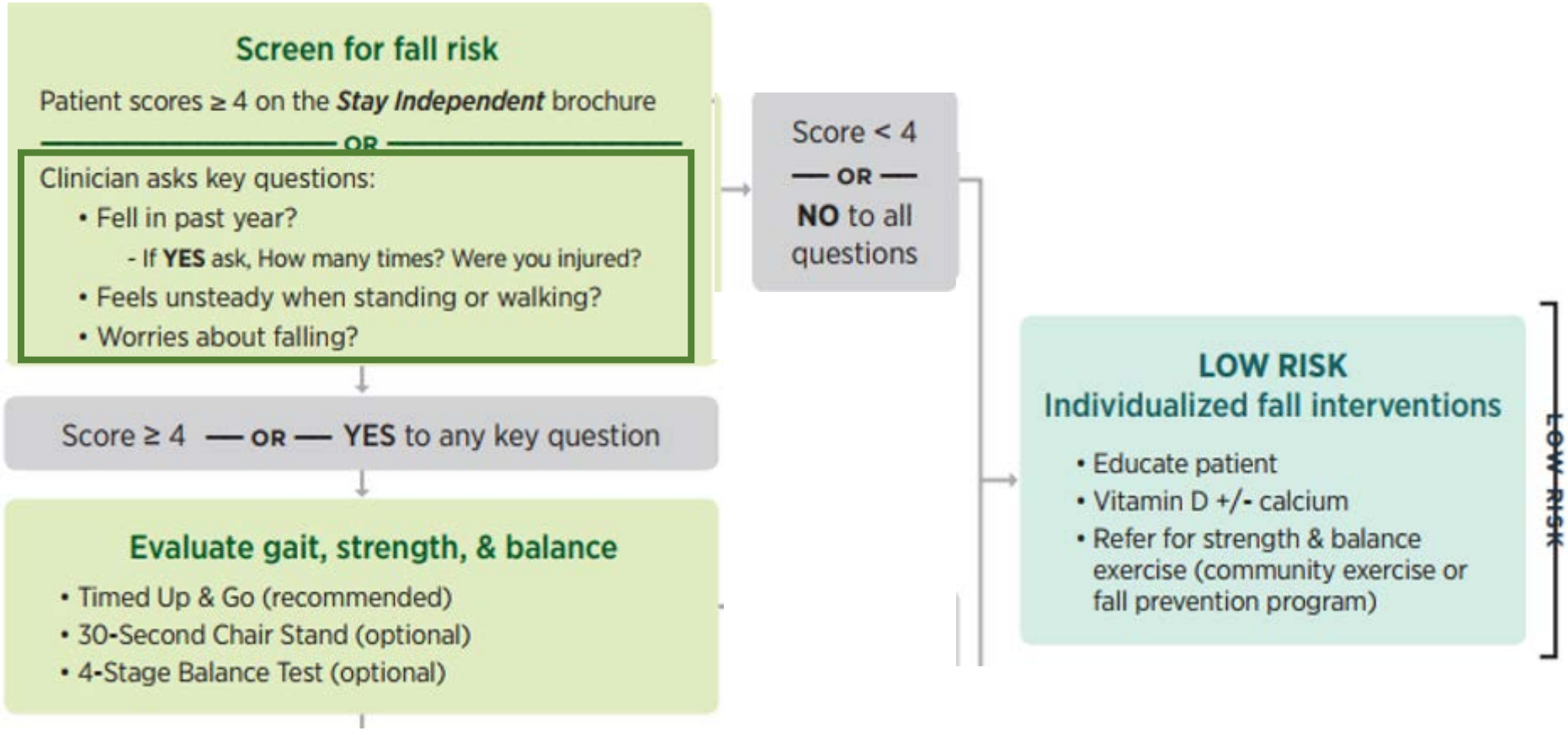
Check Your Risk for Falling

Circle "Yes" or "No" for each statement below			Why it matters
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.

Total _____ Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. J Safety Res; 2011: 42(6)493-499). Adapted with permission of the authors.


Screen for fall risk
Patient scores ≥ 4 on the Stay Independent brochure
OR
Clinician asks key questions:
• Fell in past year?
- If YES ask, How many times? Were you injured?
• Feels unsteady when standing or walking?
• Worries about falling?
Score < 4
— OR —
NO to all questions
Score ≥ 4 — OR — YES to any key question
Evaluate gait, strength, & balance
• Timed Up & Go (recommended)
• 30-Second Chair Stand (optional)
• 4-Stage Balance Test (optional)
LOW RISK
Individualized fall interventions
• Educate patient
• Vitamin D +/- calcium
• Refer for strength & balance exercise (community exercise or fall prevention program)
LOW RISK

ASSESSMENT

Timed Up & Go (TUG)

Patient _____

Date _____

Time _____ ☐ AM ☐ PM

Purpose: To assess mobility

Equipment: A stopwatch

Directions: Patients wear their regular footwear and can use a walking aid, if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters, or 10 feet away, on the floor.

NOTE: Always stay by the patient for safety.

① Instruct the patient:

When I say "Go," I want you to:

1. Stand up from the chair.
2. Walk to the line on the floor at your normal pace.
3. Turn.
4. Walk back to the chair at your normal pace.
5. Sit down again.

② On the word "Go," begin timing.

③ Stop timing after patient sits back down.

④ Record time.

Time in Seconds: _____

An older adult who takes ≥12 seconds to complete the TUG is at risk for falling.

OBSERVATIONS

Observe the patient's postural stability, gait, stride length, and sway.

Check all that apply:

- ☐ Slow tentative pace
- ☐ Loss of balance
- ☐ Short strides
- ☐ Little or no arm swing
- ☐ Steadying self on walls
- ☐ Shuffling
- ☐ En bloc turning
- ☐ Not using assistive device properly

These changes may signify neurological problems that require further evaluation.

CDC's STEADI tools and resources can help you screen, assess, and intervene to reduce your patient's fall risk. For more information, visit www.cdc.gov/steadi

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ASSESSMENT

30-Second Chair Stand

Purpose: To test leg strength and endurance

Equipment: A chair with a straight back without arm rests (seat 17" high), and a stopwatch.

NOTE: Stand next to the patient for safety.

① Instruct the patient:

1. Sit in the middle of the chair.
2. Place your hands on the opposite shoulder crossed, at the wrists.
3. Keep your feet flat on the floor.
4. Keep your back straight, and keep your arms against your chest.
5. On **"Go,"** rise to a full standing position, then sit back down again.
6. Repeat this for 30 seconds.

② On the word "Go," begin timing.

If the patient must use his/her arms to stand, stop the test. Record "0" for the number and score.

③ Count the number of times the patient comes to a full standing position in 30 seconds.

If the patient is over halfway to a standing position when 30 seconds have elapsed, count it as a stand.

④ Record the number of times the patient stands in 30 seconds.

Number: _____ Score: _____

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Patient _____

Date _____

Time ☐ AM ☐ PM

SCORING

Chair Stand
Below Average Scores

AGE	MEN	WOMEN
60-64	< 14	< 12
65-69	< 12	< 11
70-74	< 12	< 10
75-79	< 11	< 10
80-84	< 10	< 9
85-89	< 8	< 8
90-94	< 7	< 4

A below average score indicates a risk for falls.

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The 4-Stage Balance Test

Patient _____

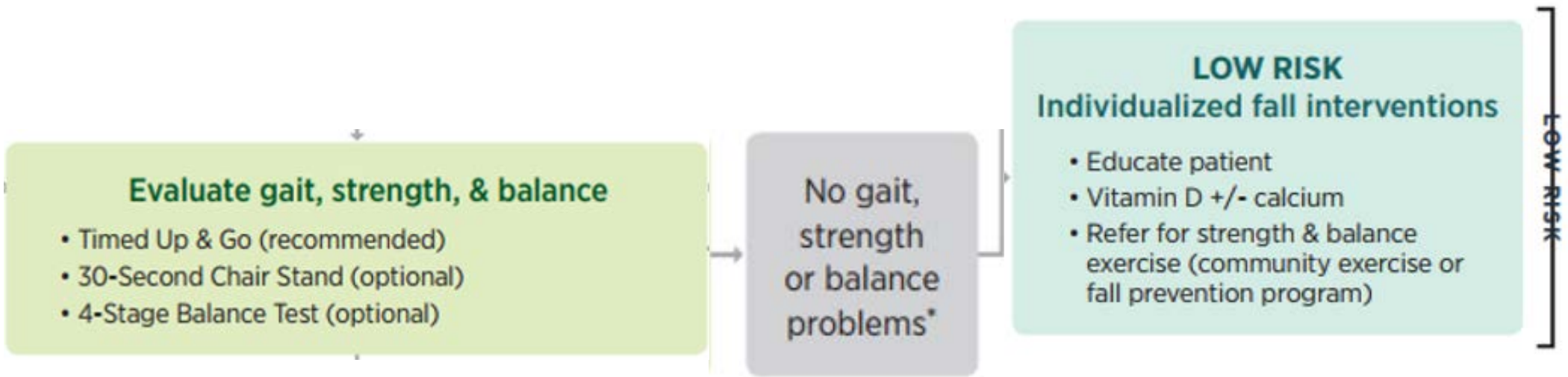
Date _____

Time _____ ☐ AM ☐ PM

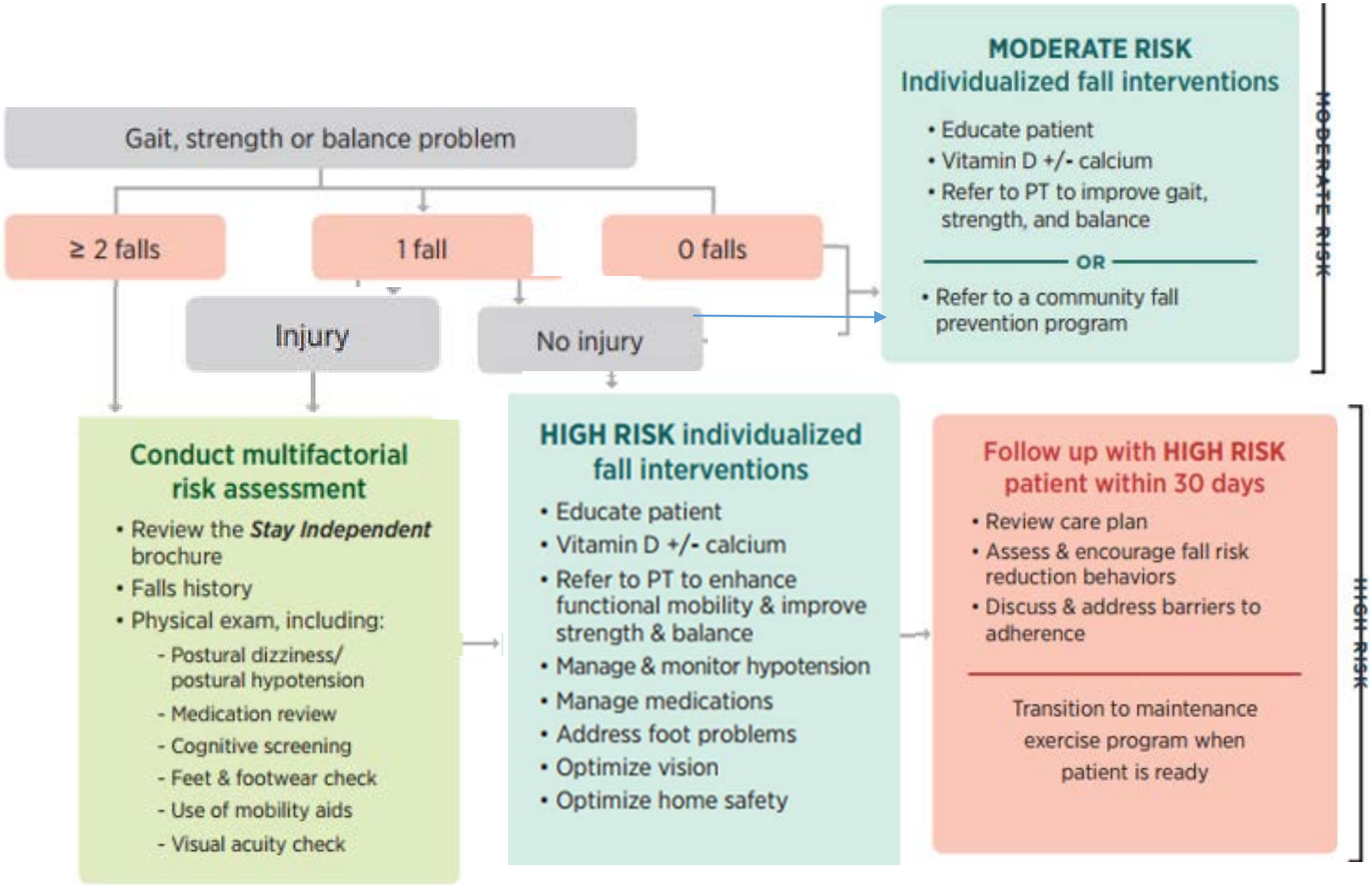
Instructions to the patient:

- I'm going to show you four positions.
- Try to stand in each position for 10 seconds.
- You can hold your arms out, or move your body to help keep your balance, but don't move your feet.
- For each position I will say, **"Ready, begin."** Then, I will start timing. After 10 seconds, I will say, **"Stop."**

	① **Stand with your feet side-by-side.**	Time: _____seconds
	② **Place the instep of one foot so it is touching the big toe of the other foot.**	Time: _____seconds
	③ **Tandem stand: Place one foot in front of the other, heel touching toe.**	Time: _____seconds
	④ **Stand on one foot.**	Time: _____seconds



*For these patients, consider additional risk assessment (e.g., medication review, cognitive screen, snycope).


Gait, strength or balance problem
≥ 2 falls
1 fall
0 falls
Injury
No injury
MODERATE RISK
Individualized fall interventions
• Educate patient
• Vitamin D +/- calcium
• Refer to PT to improve gait, strength, and balance
OR
• Refer to a community fall prevention program
MODERATE RISK
Conduct multifactorial risk assessment
• Review the Stay Independent brochure
• Falls history
• Physical exam, including:
- Postural dizziness/ postural hypotension
- Medication review
- Cognitive screening
- Feet & footwear check
- Use of mobility aids
- Visual acuity check
HIGH RISK individualized fall interventions
• Educate patient
• Vitamin D +/- calcium
• Refer to PT to enhance functional mobility & improve strength & balance
• Manage & monitor hypotension
• Manage medications
• Address foot problems
• Optimize vision
• Optimize home safety
Follow up with HIGH RISK patient within 30 days
• Review care plan
• Assess & encourage fall risk reduction behaviors
• Discuss & address barriers to adherence
Transition to maintenance exercise program when patient is ready
HIGH RISK

Fall Risk Factors

Date

Time ☐ AM

Fall Risk Factor Identified	Present?		Notes
FALLS HISTORY			
Any falls in past year?	☐ Yes	☐ No	
Worries about falling or feels unsteady when standing or walking?	☐ Yes	☐ No	
MEDICAL CONDITIONS			
Problems with heart rate and/or arrhythmia	☐ Yes	☐ No	
Cognitive impairment	☐ Yes	☐ No	
Incontinence	☐ Yes	☐ No	
Depression	☐ Yes	☐ No	
Foot problems	☐ Yes	☐ No	
Other medical problems	☐ Yes	☐ No	
MEDICATIONS (PRESCRIPTIONS, OTCs, SUPPLEMENTS)			
Psychoactive medications	☐ Yes	☐ No	
Opioids	☐ Yes	☐ No	
Medications that can cause sedation or confusion	☐ Yes	☐ No	
Medications that can cause hypotension	☐ Yes	☐ No	
GAIT, STRENGTH & BALANCE			
Timed Up and Go (TUG) Test ≥12 seconds	☐ Yes	☐ No	
30-Second Chair Stand Test: Below average score based on age and gender	☐ Yes	☐ No	
4-Stage Balance Test: Full tandem stance <10 seconds	☐ Yes	☐ No	
VISION			
Acuity <20/40 OR no eye exam in >1 year	☐ Yes	☐ No	
POSTURAL HYPOTENSION			
A decrease in systolic BP ≥20 mm Hg, or a diastolic BP of ≥10 mm Hg, or lightheadedness, or dizziness from lying to standing	☐ Yes	☐ No	
OTHER RISK FACTORS (SPECIFY BELOW)			
	☐ Yes	☐ No	

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Multifactorial Falls Risk Assessment

Interventions

Fall Prevention Patient Referral

PATIENT INFORMATION

Patient:	Referred to:
Sex: ☐ Male ☐ Female DOB: / /	
Address:	Address:
Phone:	Phone:
Email:	Email:
Diagnosis:	

TYPE OF REFERRAL

Type of specialist:

Exercise or fall prevention program:

Additional recommendations:

REASON FOR REFERRAL

☐ Gait or mobility problems	☐ Medication review & consultation
☐ Balance difficulties	☐ Inadequate or improper footwear
☐ Lower body weakness	☐ Foot abnormalities
☐ Postural hypotension	☐ Vision <20/40 in ☐ Right ☐ Left ☐ Both
☐ Suspected neurological condition (e.g., Parkinson's disease, dementia)	☐ Home safety evaluation led by occupational therapist

Other reason:

Other relevant information:

Referrer signature: _____ Date: _____

CDC U.S. Department of Health and Human Services Centers for Disease Control and Prevention

2017

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Research in press

- Healthcare **provider's perceptions** on fall prevention practices ***before implementing*** STEADI (Smith et al., 2015)
  - Large health system in NY
    - 38 medical providers from 11 practices
  - <40% asked patients if they had fallen in last 12 mo.
  - <25% referred to PT for balance or gait training
  - <20% referred for community-based fall prevention

  - ***Knowledge gaps

Research in press

- **Feasible STEADI implementation into large health systems**
  - New York (Stevens et al., 2017)
    - Clinical champion worked with primary care clinics to improve integration and address concerns.
      - In first year, 14 practices screened 79% of older adults.
        - 18% screened positive
      - 52% completed mobility and balance assessment
      - In second year, 49% older adults screened
        - 21% screened positive
  - Oregon (Casey et al, 2017; Eckstrom et al., 2017)
    - Key to successful implementation:
      - Provider roles and responsibilities
      - EHR workflows, clinical decision tools, proactive leadership, clinical champions in practice
      - Within 18 months, screened >45% of eligible patients.

Research in press

- **Feasible implementation** into large health systems
  - Massachusetts (Stevens et al., 2017)
  - Implement STEADI in primary care
  - 9-month period 48% (20,317) of patients aged 65 years and older were screened for falls risk
    - 30% (1,564) who screened positive received eval of gait, strength, balance [most often TUG]
    - 37% (2,133) who screened positive received POC and multifactorial clinical risk assessment.
    - 6% (1,272) received referrals to a community falls prevention intervention
    - 60% increase in referral volume to community interventions
    - 20% completed the intervention

Research in press

- **Implementation** of STEADI (Eckstrom, 2017)
  - 18/24 (75%) providers participated
- Providers screened 773 (64%) patients over 6 months
  - 170 (22%) patients -high-risk
    - 109 (64%) received STEADI interventions
    - Lowest intervention = 22% on high-risk medications.
  - Comparing *three key* questions vs full *Stay Independent* questionnaire
    - Key questions
      - decreased screening burden,
      - increased the number of high-risk patients.

Research in press

- Feasible in Academia (Reinoso, et al. 2017)
  - Interdisciplinary teams of faculty (n=8) and students (n = 31)
  - nursing, physical therapy, pharmacy, and social work
  - engaging older adults in the community in fall risk assessment
    - Screened 27 older adults in one day.
    - Positive feedback from participants and students
- Systems changes and sustainability of 3 state dept of health (Smith et al., 2017)
  - KEY - involving stakeholders and partnering with other agencies.

Research in press

STEADI algorithm *adapted* for use in with the 2011-2015 National Health and Aging Trends Study data (Lohman et al., 2017)

- N = 7,392
- Compared with low risk of falls on the algorithm:
  - Moderate risk = 2.62 greater odds of falling over subsequent 4 years
  - High risk on algorithm = 4.76 greater odds of falling over subsequent 4 years
    - Also associated with multiple falls
    - Not associated with greater risk of mortality

Research in press

- STEADI frailty status in fall prediction (Crow & Lohman et al., 2018)
- NHATS data (N = 7,392)
  - (48.0%) low risk
  - (40.1%) moderate risk
  - (11.9%) high risk
- Adjusted risk of falling over the 4 subsequent years 2.5x as great for mod-risk
- ~4x as great for high-risk
- Risk of falling greater for prefrail (HR = 1.34, 95% CI 1.16–1.55) and frail (HR = 1.20. 95% CI = 0.94–1.54) than for those who were robust. But not as predictive as STEADI

Research in Press

Pilot study in ED - (Greenberg, 2015)

Mean age 74 years

Patient answered yes to any key questions - both groups had follow-up phone call in 6 weeks

- **Treatment (n=27)** received assessment of fall risk
  - Handout on agreed upon actions to take
  - 84.6% chose fall prev strategy
  - 11.5% began ex.
  - 11.5% reviewed meds
  - 23.1% vision checked
  - 26.9% home safer*
- **Control (n=25)**
- CDC brochure with standardized information about controlling risk for falls.
- 25% chose fall prev strategy
- None began regular ex, had med reviewed, or made home safer.

Research in press

- Using STEADI in Level 1 Trauma hospital-based setting resulted in:
  - Decreased LOS
  - Increased rates of d/c home
  - Decreased readmission rates with falls

- Only on https://www.cdc.gov/steadi/stories/hospital.html

OUR experience

Physical therapy instructors and students

- Since 2015
- PT students at UAMS have been conducting yearly fall risk screenings with the STEADI in retirement homes

- Education by online modules
- Practice important!
- Teams
  - Pharmacy students one year
- Advertisement of open fall risk screenings

Issues from our perspective

Nursing instructors and students

- **Research question**: Does completion of an online falls prevention course with opportunity to practice skills increase self-efficacy in fall risk assessment and management among undergraduate and graduate nursing students?
- **Convenience sample** of students enrolled in six sections of a senior level clinical course in the Bachelor of Science program and a graduate level health assessment course in the Doctor of Nursing Practice program. Final sample of 63 students.

Falls Prevention Pre-test

Take this test before you access the falls prevention learning module. It will measure your knowledge before completing the learning module. The score will not affect your grade. After you complete the test, please complete the self-efficacy survey.

Student Report of Fall Prevention Self-Efficacy

Rate your degree of confidence in performing the following skills. For each skill, choose a number from 0-100, using the following scale:

0 10 20 30 40 50 60 70 80 90 100		
Cannot do at all	*Moderately certain can do*	*Highly certain can do*

When you have completed this survey, the online learning module will become available to you.

Fall Prevention Lesson

Enabled: Adaptive Release, Statistics Tracking

Watch Media

Name: **Preventing Falls in Older Adults (33:56)**
Duration: 33:56
Added: 19 Nov 2015 09:28 AM
Added By: Susan Patton
Description:
Tags:

Overview of this lesson

According to the National Center for Injury Prevention and Control, one-third of people 65 and older fall each year, every 20 minutes an older adult dies from a fall in the United States, one out of five falls causes a serious injury such as a head trauma or fracture, less than half of Medicare beneficiaries who fell in the previous year talked to their health care provider about it, and people age 75 and older who fall are four to five times more likely than those age 65 to 74 years to be admitted to a long-term facility for a year or longer. Injuries from falls lead to:

1. Fear of falling
2. Sedentary behavior
3. Impaired function
4. Lower quality of life

Falls are the leading cause of death due to unintentional injury among older adults. Early identification of older adults at risk for falls can decrease rates of falls and fall-related injury. Clinical guidelines recommend annual fall risk screening for adults over sixty-five, and evidence based screening tools are available to health care providers. However, uptake of evidence based screening and assessment protocols by providers has been limited (Shubert, 2013). It is my theory that including fall risk assessment in the

Qualitative Results: Learning to do a falls risk assessment

1. Increasing self-efficacy through mastery

2. Learning through observation

3. The power of positive reinforcement

Issues from our perspective

- Addressing ageism
- Contributions of online vs. face-to-face approaches
- IPE
- Longitudinal studies

Program Impact

- 14 clinicians (physical therapists and nurses) have been educated on and conducted screenings
- 193 physical therapy and nursing students have been educated on and conducted screenings.
- 217 older adults in Northwest Arkansas have been screened for falls.

Future impact/plans

- Multidisciplinary falls risk screenings
- Community Fall Prevention Day

Medical and community settings need to work together to create a “no wrong door” approach for fall prevention and management.
(Ganz, Alkema, & Wu, 2008, p. 266)

TO IMPLEMENTATION

- Considerations of adherence to referrals/recommendations to prevent falls

- Ensure screenings and assessments are being conducted properly
  - follow the directions ☺

- Don’t just refer/recommend – provide the resources and address barriers!

CDC Estimates on impact of implementation

- For every 5,000 health care providers who adopt STEADI
- 

6 million patients may be screened
- 1 million falls could be prevented
- Estimated $3.5 billion savings in medical costs
- (Centers for Disease Control and Prevention, 2016)

TO IMPLEMENTATION

- Good learning experience for students
  - Emphasize importance of fall prevention
  - Interprofessional screenings/assessments

- Good community event

- You do not need to be a health care provider to conduct most of the aspects of the falls risk screening/assessment

STEADI

IMPLEMENTATION PLANS AND DISCUSSION TIME ☺

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