

## Addressing Treatment for Fall Risk Patients in Cardiopulmonary Rehabilitation

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# Addressing Treatment for Fall Risk Patients in Cardiopulmonary Rehabilitation

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## INTRODUCTION

- The incidence of falls is of great concern in older adults and U.S. health care costs for fall injuries are significant.
- 1 in 4 older adults over age 65 fall each year and many of these falls are preventable.
- Falls reduce the confidence, activity level, independence and quality of life for older adults.
- Many cardiac and pulmonary rehabilitation programs often do not include fall risk treatment as part of their approach to patient care.

## OBJECTIVE/PURPOSE

- The Lehigh Valley Health Network (LVHN) Cardiac Rehabilitation programs at LVH–Cedar Crest, LVH–Muhlenberg, and LVH–Schuylkill wanted to better address patients' overall physical needs and balance deficits by improving the fall assessment process in cardiopulmonary rehabilitation.

## OBJECTIVES:

- To add a program intervention (balance component) for patients who were identified as a positive fall risk.
- To improve patient experience and confidence related to mobility and strength.
- To enhance program quality.
- To provide a continuum of care for fall prevention and education as patients transition from acute to ambulatory care.

## DESIGN

- Staff completed a three question hospital fall risk questionnaire with all patients entering cardiopulmonary rehabilitation.
- If the patient was deemed a positive fall risk, staff had the patient perform a Timed Up and Go (TUG) Test.
- A TUG score of  $\geq 14$  seconds was considered high risk.
- A TUG score of  $< 14$  seconds was considered low risk.

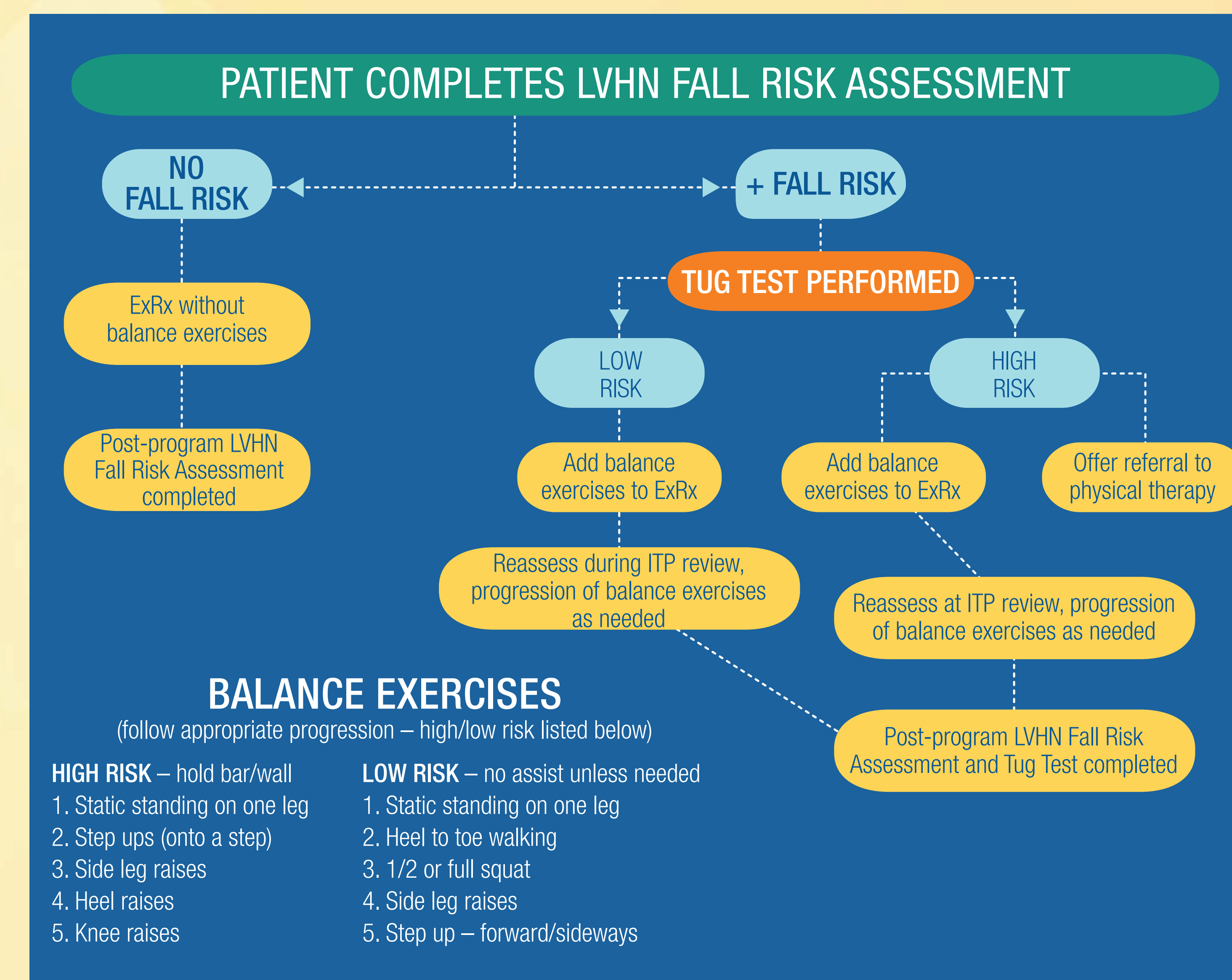
## HIGH RISK FALL RISK PATIENTS

- Offered a referral to physical therapy for specialized rehab to address gait and balance problems.
- Performed simple core strength and balance exercises either seated or standing (with or without using a bar or wall assist).
- Performed their normal cardiovascular and strength training exercises.
- Performed TUG test pre/post program and at 30 day reassessments.

## LOW RISK FALL RISK PATIENTS

- Performed simple core strength and balance exercises (with or without using a bar or wall assist).
- Performed their normal cardiovascular and strength training exercises.
- Performed TUG test pre/post program and at 30 day reassessments.

## LVHN CARDIOPULMONARY REHABILITATION FALL RISK ALGORITHM



## DESIGN

High risk patients who severely lacked mobility or who were poorly deconditioned were given seated exercises to address core and lower extremity strength.

- Knee Raises
- Sit and Reach
- Torso Twist holding a ball
- Leg Extension
- Draw Circles holding a ball

## METHODS

- Data was collected by chart review for 9 months (Oct. 2018–June 2019).
- Collected data included:
  - Total number of positive fall risk patients per month per site.
  - Number of patients who were correctly assigned core/balance exercises in the initial exercise prescription.
  - Pre and post-program TUG scores.
  - Due to a fair occurrence of program dropouts, a repeat TUG test was added at each 30 day individual treatment plan review.
- Percent change of TUG test scores was calculated to reflect benefit of treatment.
- Pre and post-program quality of life (QOL) scores were compared and percent change was calculated.

## RESULTS

- 241 total patients were identified as fall a positive fall risk throughout the 3 sites.
- Pre/post or reassessment data was successfully collected on 75 patients.
  - Only patients with pre/post/reassessment TUG data or pre/post/reassessment QOL data were included in calculations.
- 85% of patients showed improvement in TUG performance post program or at reassessment.
- At reassessment, 15% of patients improved TUG scores from the high risk to the low risk category for falls (TUG score  $< 14$  seconds).
- No high risk fall patients requested referral to physical therapy for balance/gait training.
- Staff compliance in assigning balance treatments improved from an average of 52% in the first 3 months to 95% in the subsequent 6 months.

## OVERALL RESULTS

### TUG SCORES

- Scores improved by an average of 17%.
- Individual improvements ranged from 1% to 83%.

### QUALITY OF LIFE SCORES

- Scores improved by an average of 10%.
- Individual improvements ranged from 2% to 62%.

### SITE SPECIFIC RESULTS

SITE	AVERAGE IMPROVEMENT IN TUG SCORES	AVERAGE IMPROVEMENT IN QOL SCORES
LVH–Cedar Crest	22%	13%
LVH–Muhlenberg	15%	13%
LVH–Schuylkill	14%	5%

## CONSIDERATIONS/LESSONS LEARNED

- Because balance assessment had not been a routine part of cardiopulmonary rehabilitation, staff initially had difficulty remembering to include the TUG test in their patient assessments.
- There was no way to tell the impact of a patient's collective program on improved TUG and QOL scores.
- Only 31% of data was eligible to calculate the project's results due to program dropout rates of 25-50% for this population, clinician's failure to conduct a post program TUG test, and patients not completing the program by the end of June 2019.
  - Adding TUG reassessment at each 30 day ITP review:
    - Helped get clinicians used to regularly administering TUG tests during treatments.
    - Reduced the loss of data due to patient dropout from the program.

## CONCLUSIONS

- Adding balance and core strength exercises to exercise prescriptions in cardiopulmonary rehabilitation resulted in improved TUG scores.
- Patients responded favorably to performing these exercises during their sessions.
  - Positive feedback was received from patients about the value of performing the exercises.
  - The exercises provided a helpful, purposeful break for deconditioned patients who needed to rest between cardiovascular modes.

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