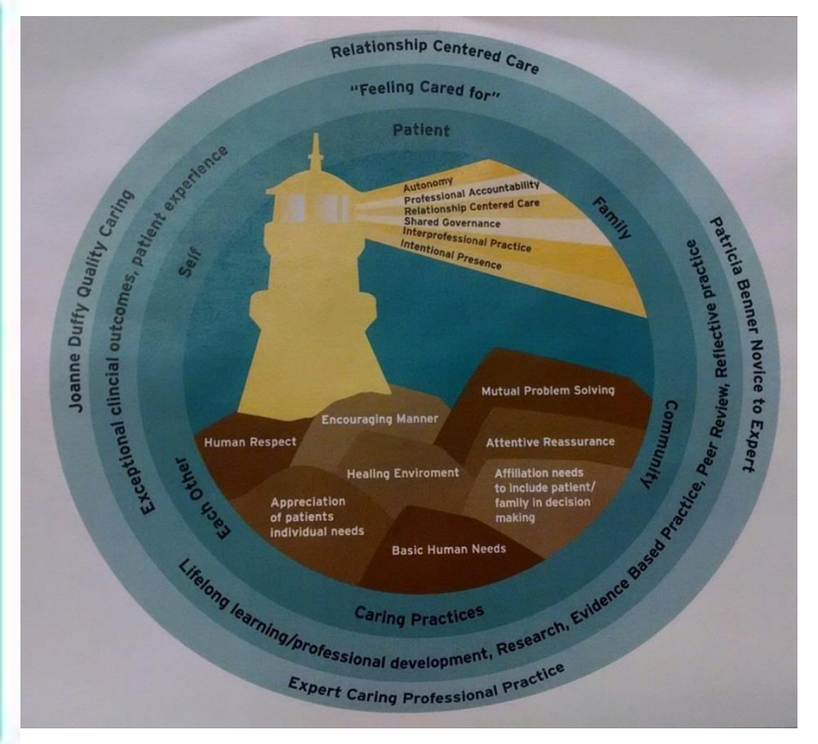
Using Innovative, Evidenced Based Strategies in a Rehabilitative Setting to Successfully Decrease Falls Attributed to New, State of the Art Exercise Equipment



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The Center For Cardiac Fitness Team

The Miriam Hospital
A Lifespan Partner

BACKGROUND

Accredited by the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) since 1996, The Miriam Hospital Center For Cardiac Fitness (CCF) is a 12,000 sq. ft., state of the art rehabilitation facility staffed with over 20 experienced health care professionals.

Cardiologists, nutritionists, behavioral health specialists, exercise physiologists, pharmacists and registered nurses all work collaboratively to address needs of cardiac rehabilitative patients; providing the correct balance of cardiovascular conditioning, nutrition, stress management, education, and individual support services for the primary goal of secondary prevention.

The Center For Cardiac Fitness facility is utilized for varied rehabilitation and prevention/wellness programs: cardiac and pulmonary rehabilitation, cardiopulmonary maintenance, employee fitness, and the Health for Life Primary Prevention Program implemented in 2013.

In an already large program, with recent approval of Heart Failure as indication for cardiac rehabilitation, referrals and patient volume are still on the rise!

DEFINE

What's the problem?

In 2011, in an effort to continually provide a safer, state of the art facility for rehabilitative patients, The Center For Cardiac Fitness purchased new fitness equipment. With new equipment came unexpected environmental risks and increased falls.

The Center for Cardiac Fitness' fall rate in 2012

(0.42 falls/1000 visits)

almost doubled from that of 2011

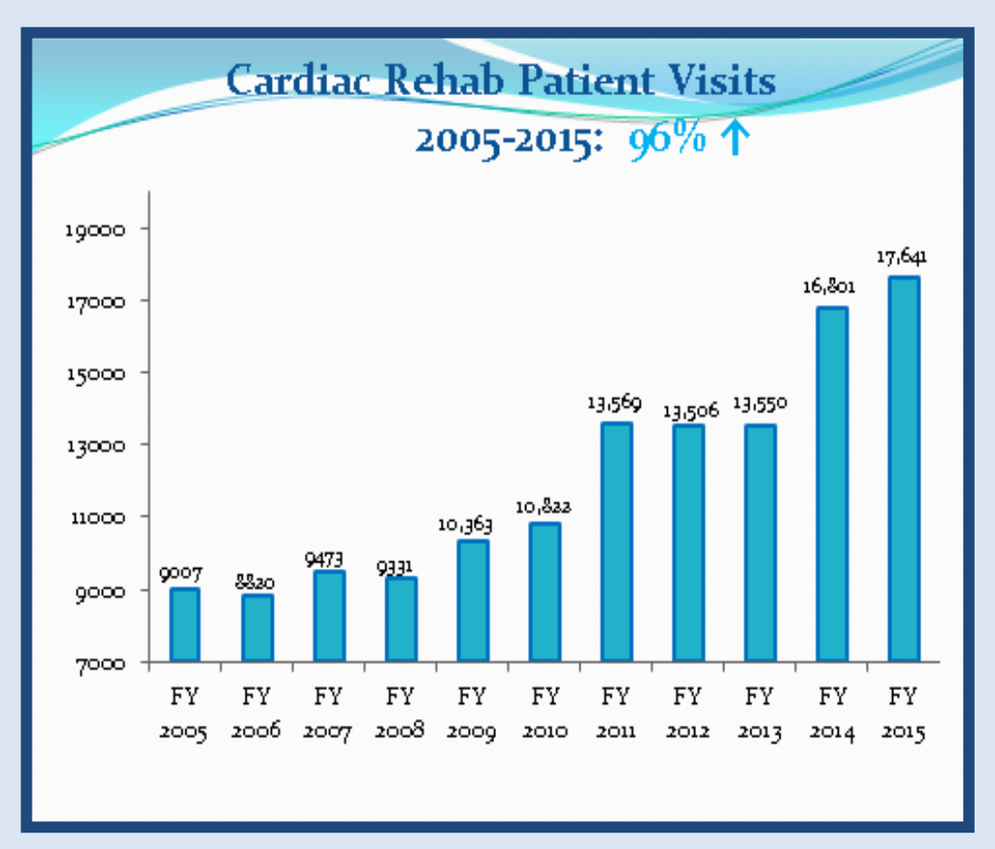
(.246 falls/1000 visits);

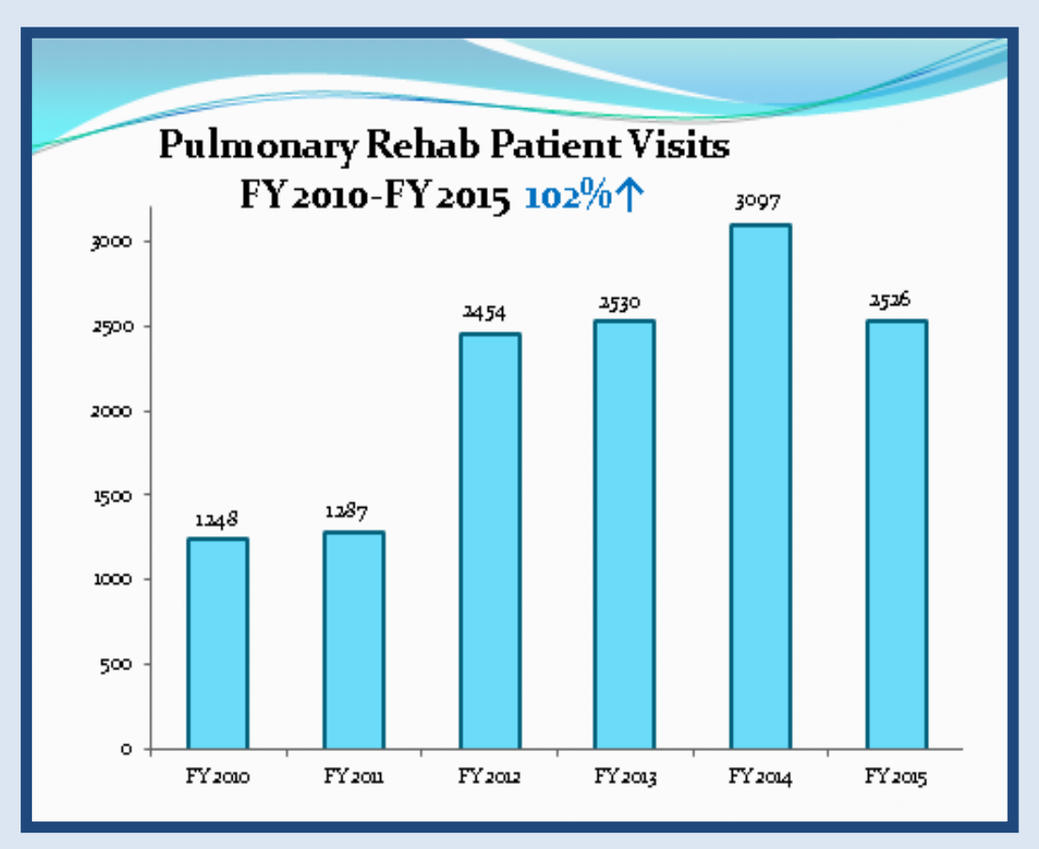
attributed to risks associated with new, state of the art exercise equipment.

In addition to the introduction of new equipment, the Center supports a large patient volume which has grown 198% over the last decade with a 140% increase in patient referrals.

GOAL

Decrease fall rates attributed to new exercise equipment while also meeting the challenges of program growth and the needs of the lower functional heart failure population.

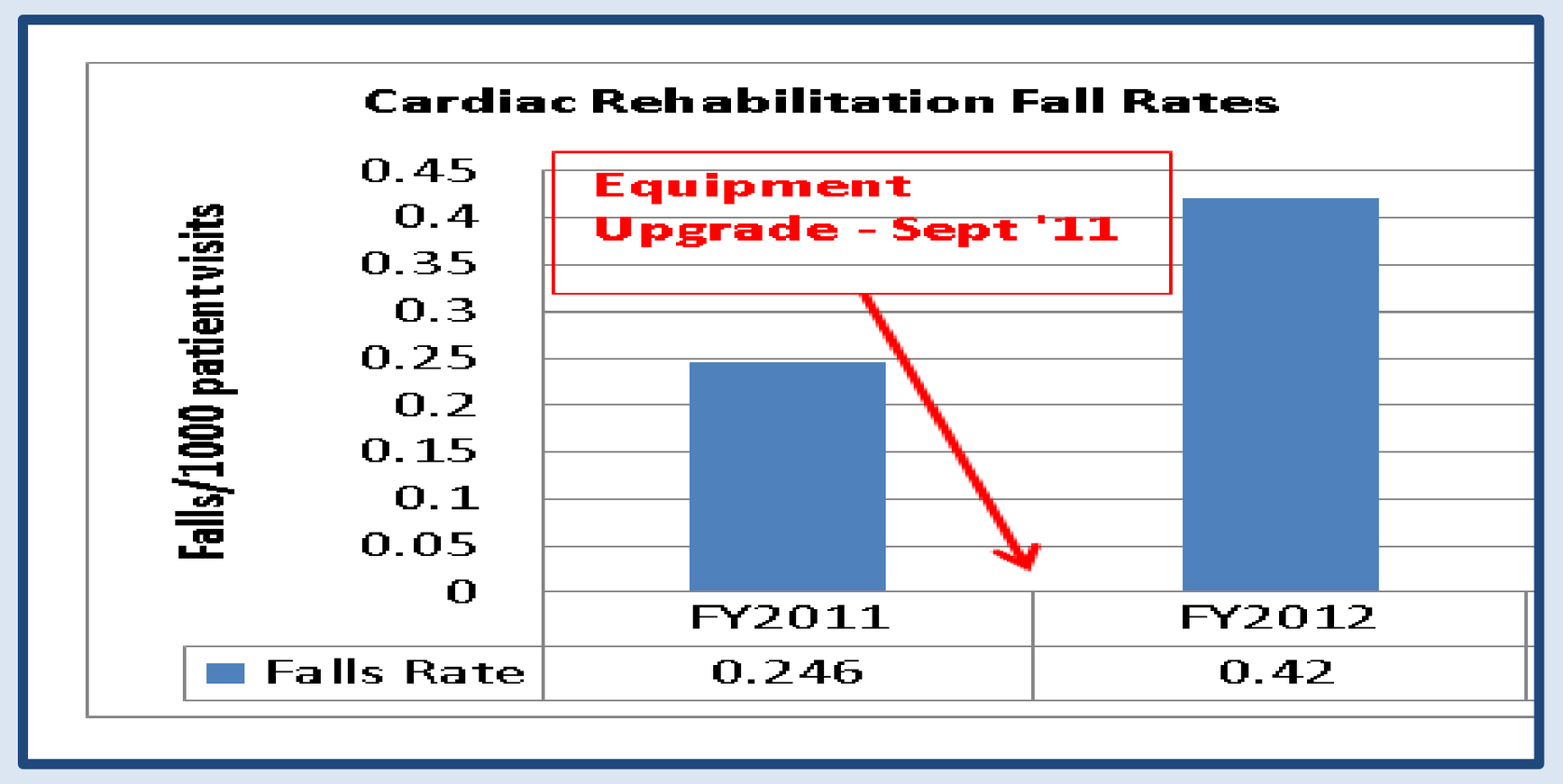




MEASURE

Evaluation & Assessment

CCF treats patients of all ages ranging from 29 – 100 years of age. The average male patient is 62.75 years old and 65 years old for females; an age group at higher risk to suffer from fall related injuries. Falls are the leading cause of injury at the CCF. Research demonstrates, however, that regular exercise, through increases in flexibility, core strength and range of motion, can help prevent many of the falls older patients' experience. However, with new equipment, despite regular supervised exercise , the center noticed that falls were occurring at an increased rate.



ANALYZE

Identify root causes

With the increase in falls in 2012, staff reviewed and analyzed the root cause of these falls.

Demographic commonalities in gender, age, diagnosis, or program type were not found.

Analysis shows that the majority of falls occurred as a result of one of 3 following reasons:

- Incorrectly operating the new exercise modalities
- Improper mounting or dismounting the new exercise modalities
- Environmental concerns; navigating around the exercise equipment .

IMPROVE

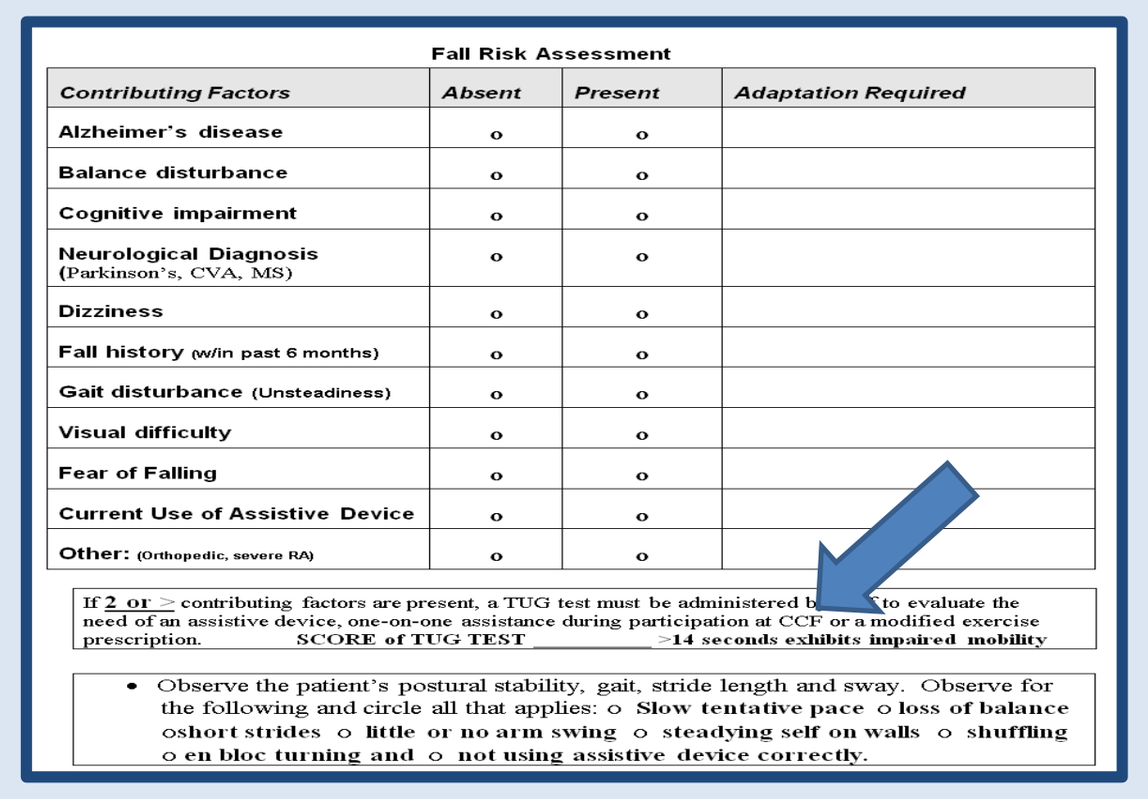
Implement solutions & measure results

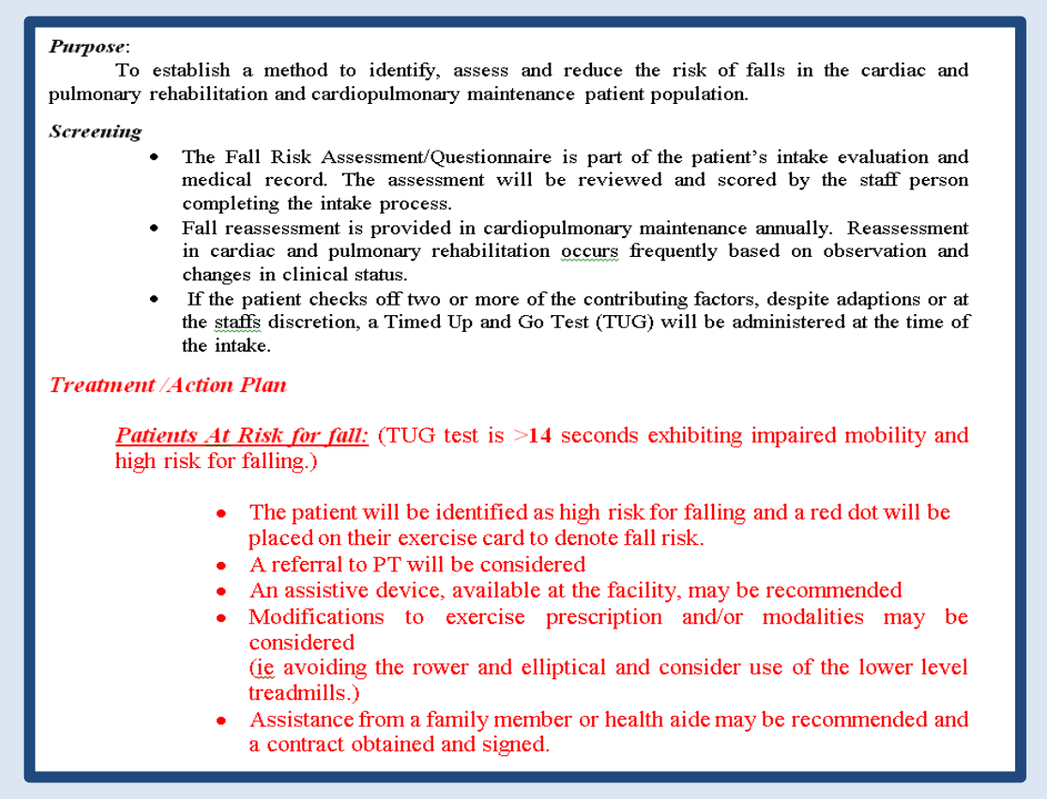
Improvement initiatives and interventions were implemented in the following 4 area's :

- Patient Assessment a reduced threshold on fall risk assessment to qualify patient for use of an assistive device .
- Patient Education with focus on reinforcement and return demonstration.
- Equipment Modifications to simplify operations and improve safety when mounting & dismounting
- Adaptations to the Environment to reduce congestion and create pathways to travel

Revised Patient Assessment

Time Up & Go (TUG) threshold reduced

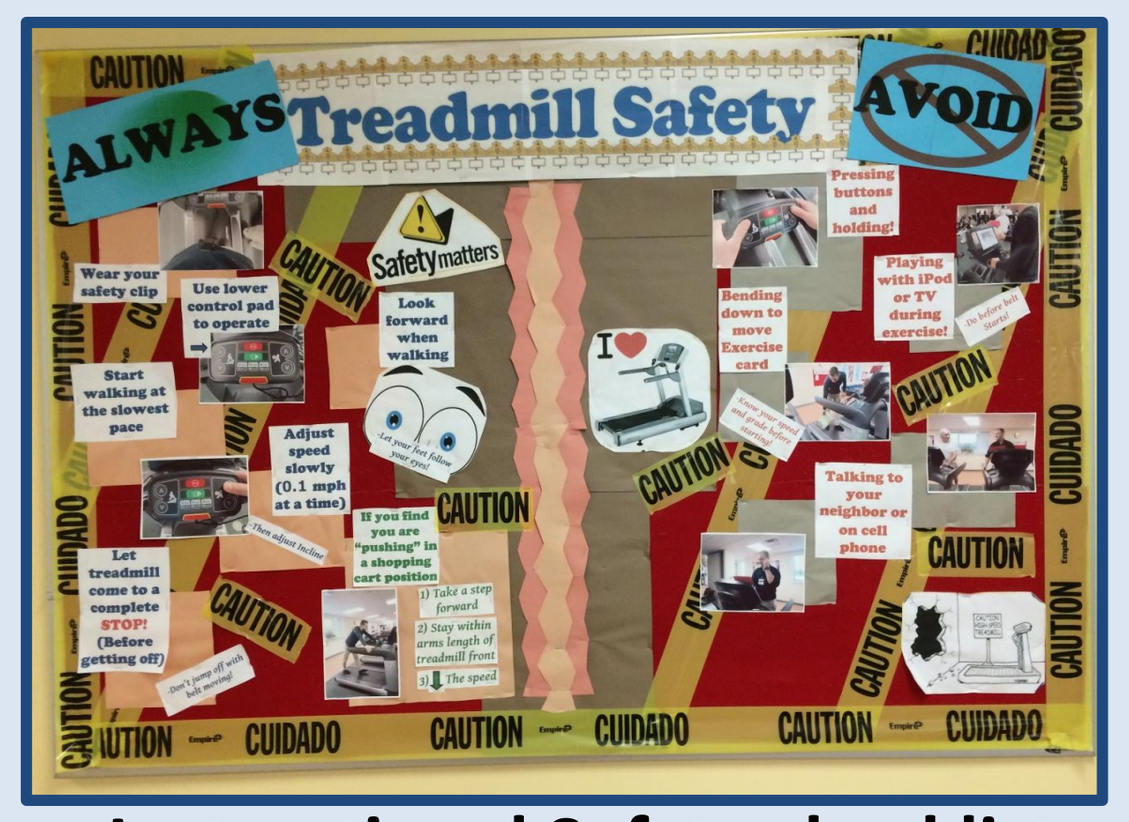




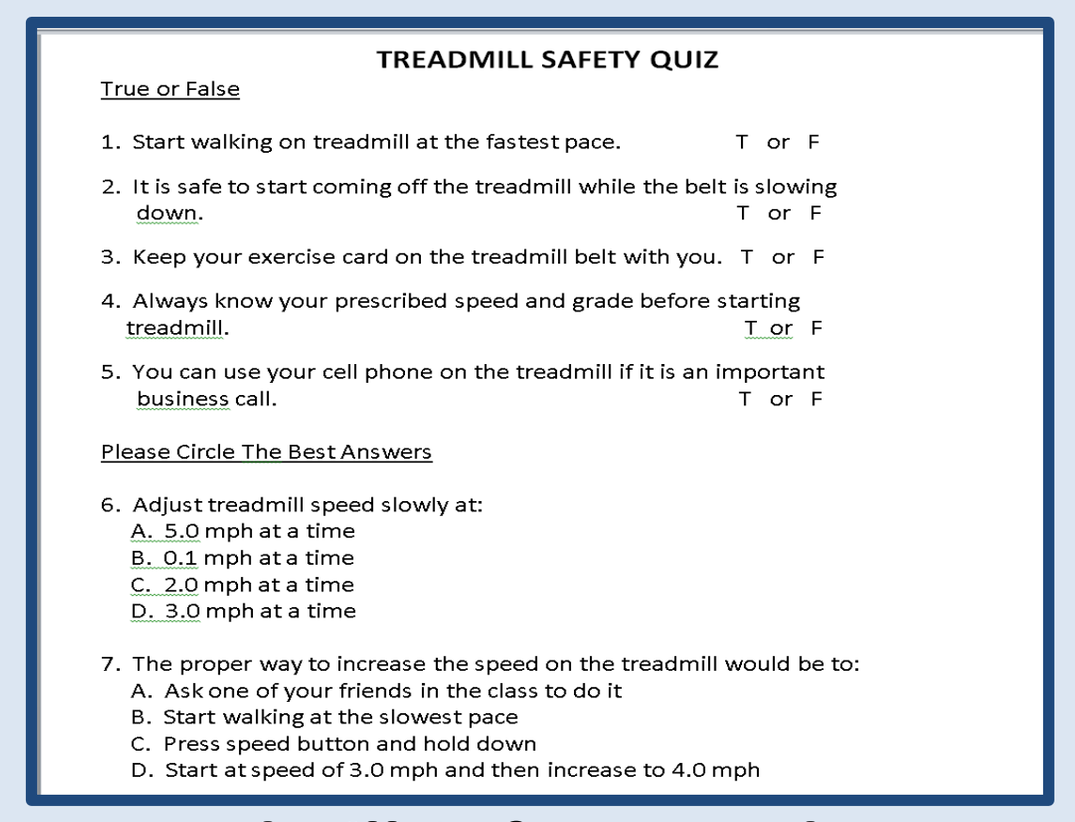
Assistive devices & nap sacks purchased for patients at risk for fall

Patient Education

Bulletin Board



Treadmill Safety Quiz



TREADMILL SAFETY QUIZ

True or False

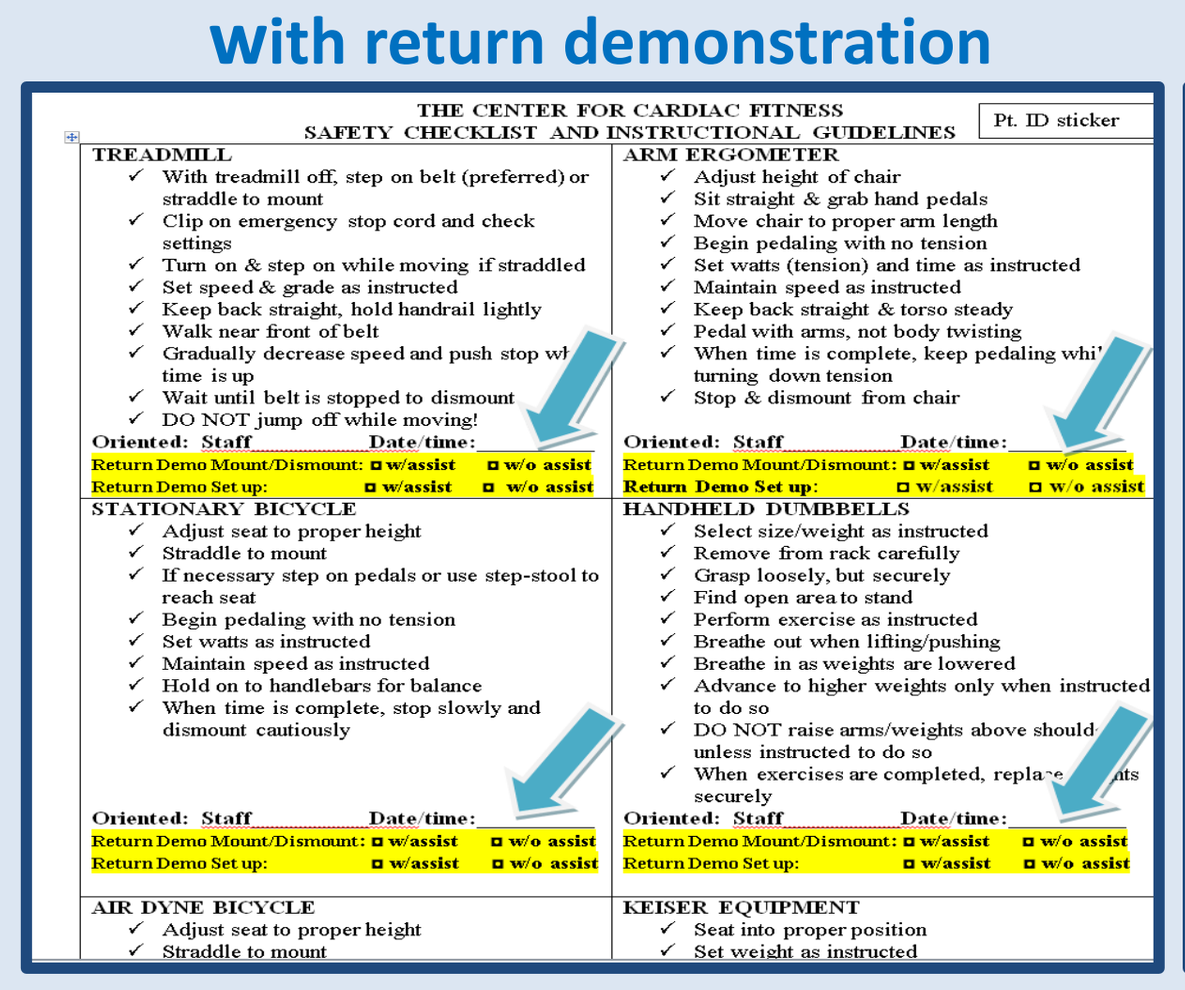
1. Start walking on treadmill at the fastest pace. T or F
2. It is safe to start coming off the treadmill while the belt is slowing down. T or F
3. Keep your exercise card on the treadmill belt with you. T or F
4. Always know your prescribed speed and grade before starting treadmill. T or F
5. You can use your cell phone on the treadmill if it is an important business call. T or F

Please Circle The Best Answers

6. Adjust treadmill speed slowly at:
   A. 5.0 mph at a time
   B. 0.1 mph at a time
   C. 2.0 mph at a time
   D. 3.0 mph at a time
7. The proper way to increase the speed on the treadmill would be to:
   A. Ask one of your friends in the class to do it
   B. Start walking at the slowest pace
   C. Press speed button and hold down
   D. Start at speed of 3.0 mph and then increase to 4.0 mph

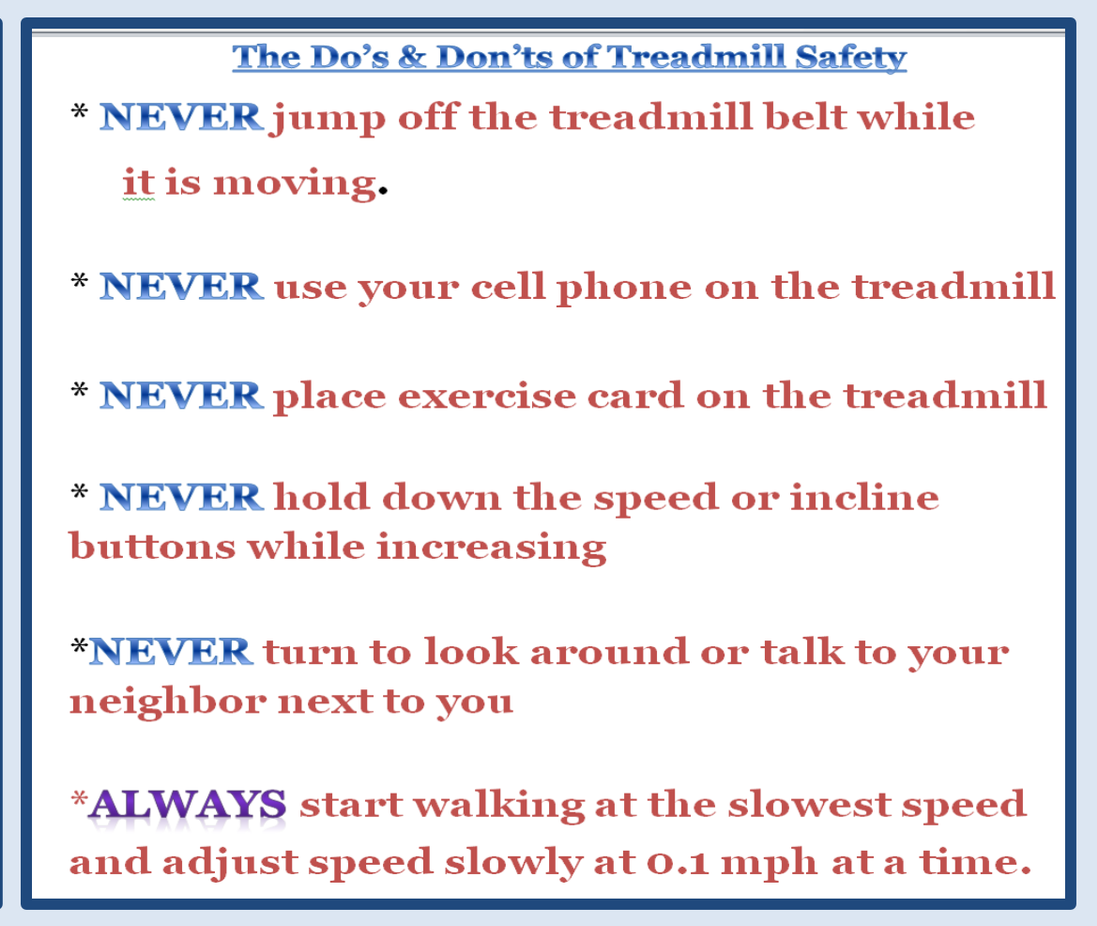
Instructional Safety checklist

with return demonstration



Treadmill Safety Handout

Do's & Don'ts



The Do's & Don'ts of Treadmill Safety

* NEVER jump off the treadmill belt while it is moving.

* NEVER use your cell phone on the treadmill

* NEVER place exercise card on the treadmill

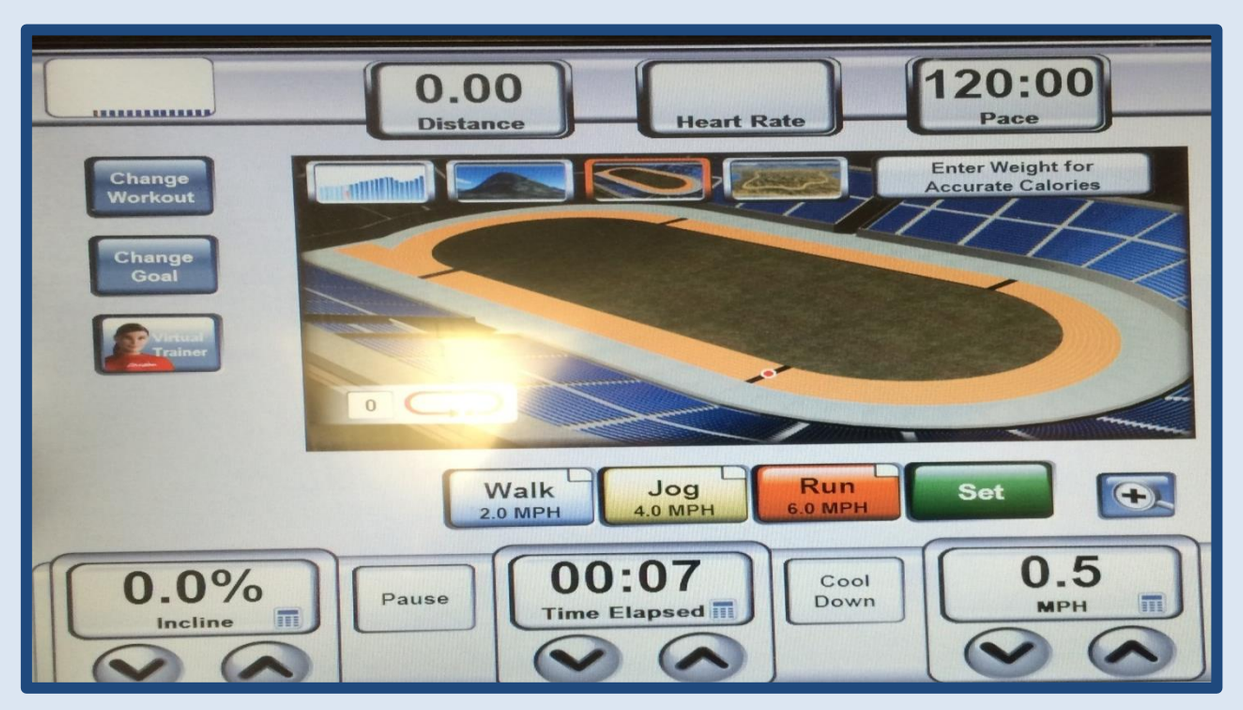
* NEVER hold down the speed or incline buttons while increasing

*NEVER turn to look around or talk to your neighbor next to you

*ALWAYS start walking at the slowest speed and adjust speed slowly at 0.1 mph at a time.

Equipment Modifications

Remove games & cap maximum speed on Treadmills



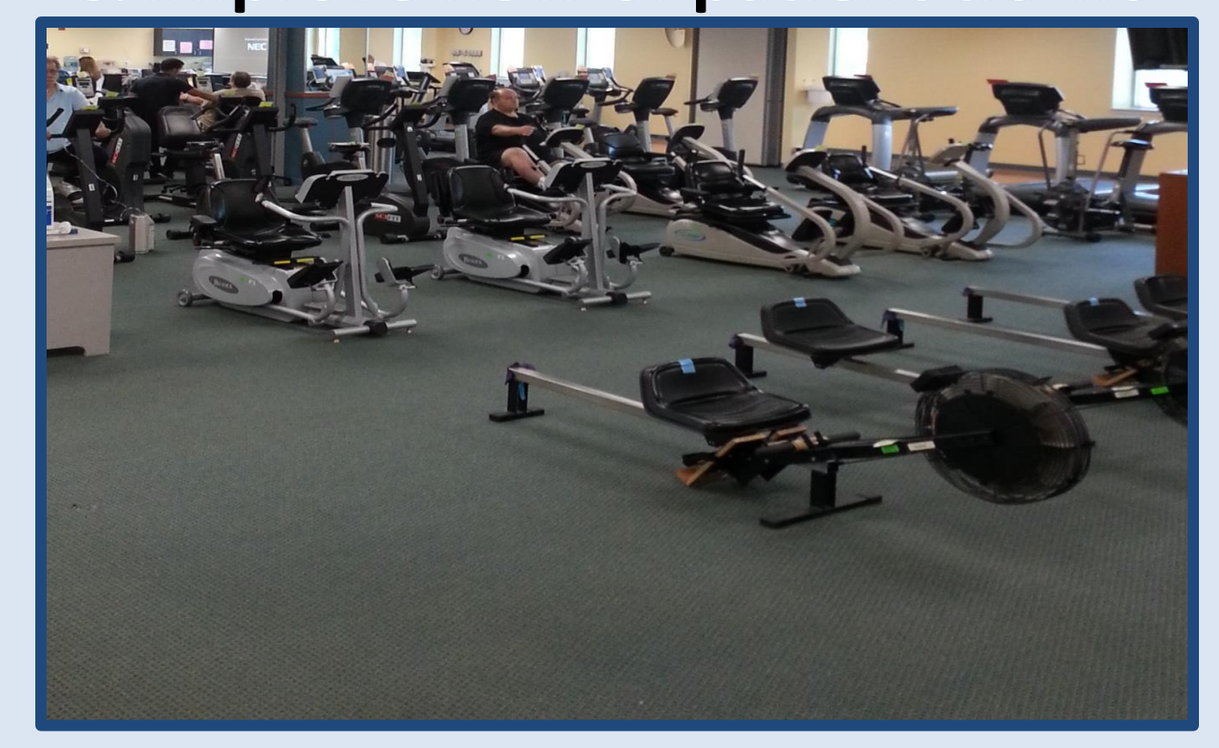
Disconnect adjunct display on treadmills to simplify operating Instructions

Purchase low level treadmills with lower deck levels & simplified screens for patients with physical and cognitive limitations

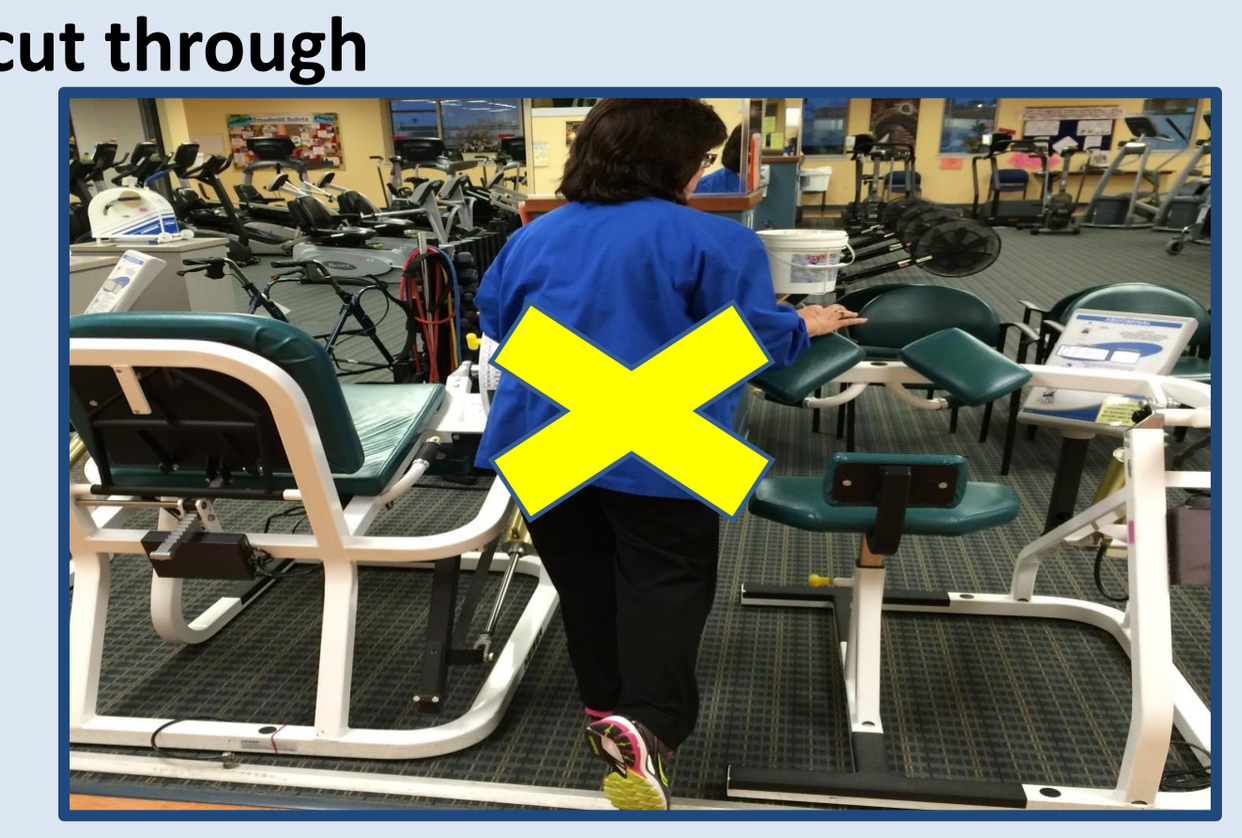
Adaptations to the Environment

Relocated equipment to create pathways to travel

Removed equipment to reduce congestion & improve flow of patient traffic



Implemented access points to enter & exit the exercise floor & to avoid cut through

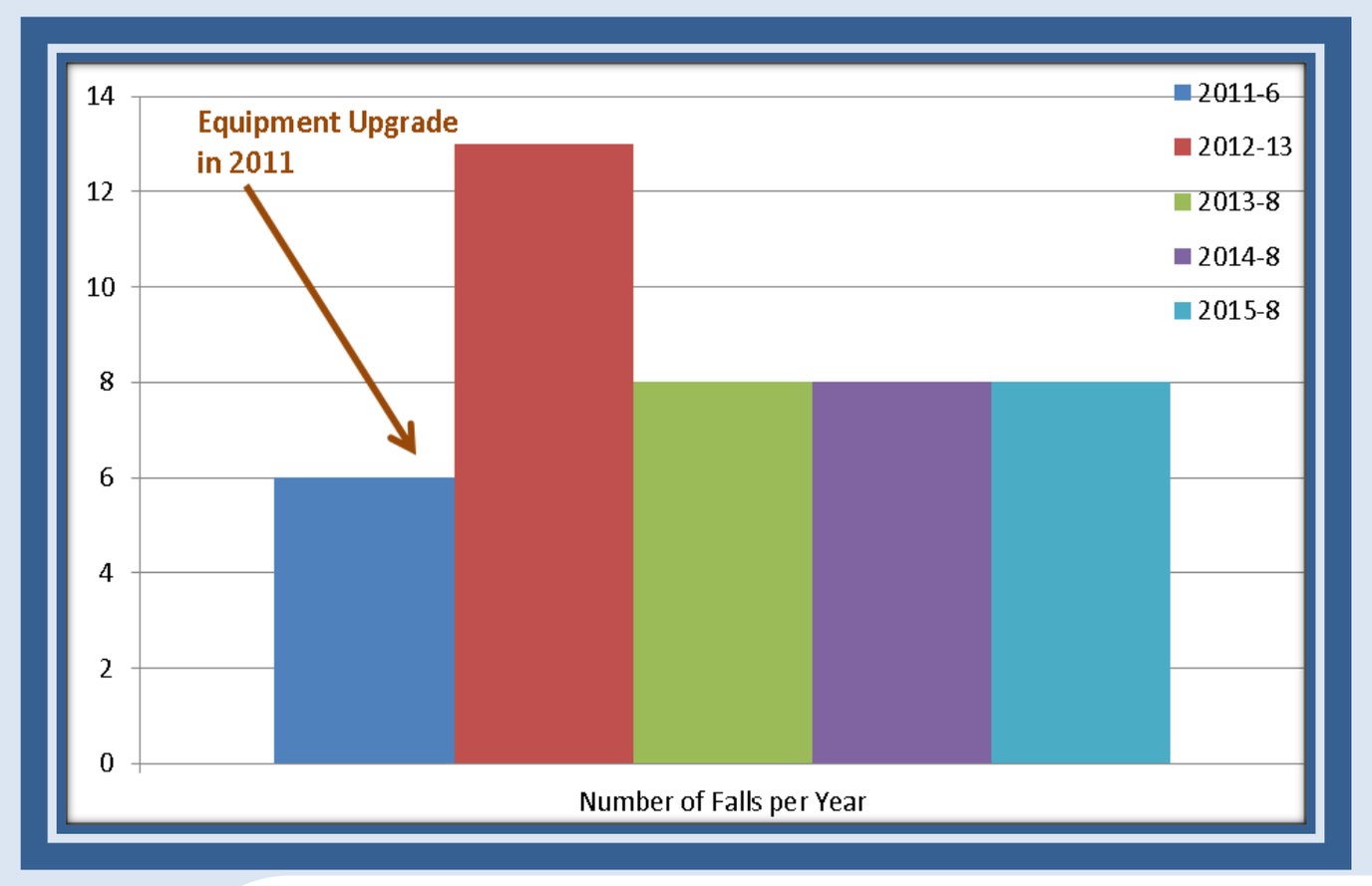


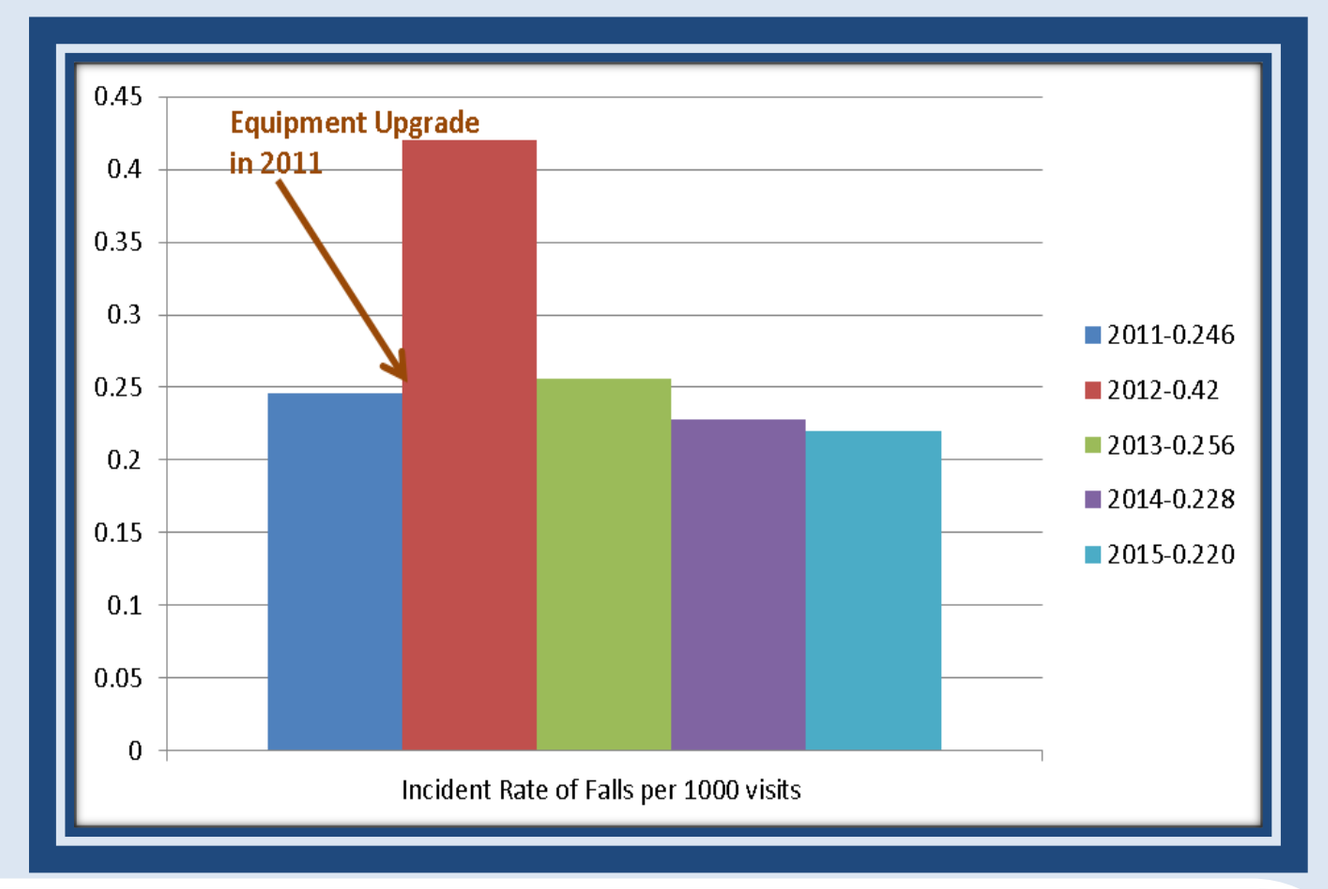
OUTCOMES

Over the past 3 years, many evidence based fall prevention interventions and strategies were implemented resulting in a significant reduction in falls over the past 3 years .

Graph 1 depicts the Number of Falls per Year at The Center For Cardiac Fitness.

Graph 2 depicts the Incident rate per 1000 visits at The Center For Cardiac Fitness



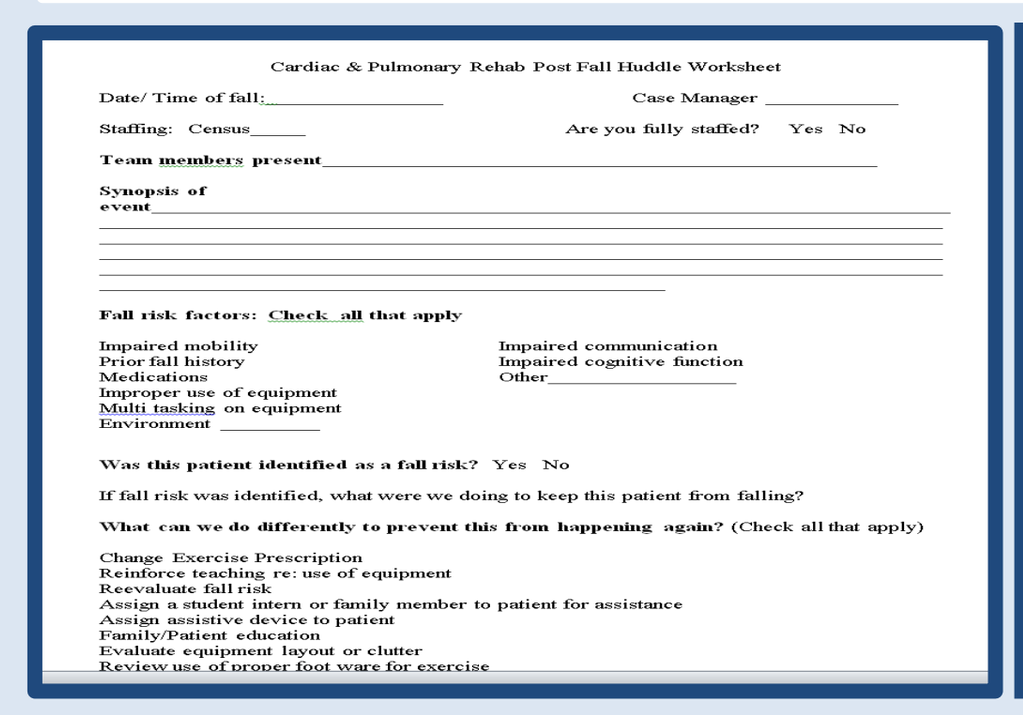


To better assess and improve quality outcomes, TMH's Center For Cardiac Fitness will be participating in the AACVPR National Registry, as well as utilizing the new NDNQI Ambulatory Falls indicator. The CCF now measures falls using the fall rate calculation reported as part of participation in the NDNQI database. The national comparison, utilizing falls per 1000 patient visits, has been critical in evaluating interventions in a center that has increased significantly in volume and better reflects improvement efforts in a rapidly growing service.

CONTROL

sustaining the progress with a team effort

A post fall huddle worksheet was developed to review falls at biweekly staff meetings in order to immediately develop action plans that address root causes. Success is the result of a collaborative effort with all members of the rehab team participating in our departmental fall prevention initiative.



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