

Iowa Falls Prevention Coalition
**Getting to the Root Cause of Falls:
A Falls Prevention Program**



Sue Ann Guildermann, RN, BA, MA
Director of Education, Empira
squilder@empira.org

Objectives

- Utilize root cause analysis to determine the causes of resident falls.
- Investigate external, internal and operational factors that may have contributed to a fall.
- Identify effective intervention to reduce resident falls in skilled nursing homes.

Definition of Falls

- Unintentional change in position coming to rest on the ground, floor or onto the next lower surface (e.g., onto a bed, chair or bedside mat). The fall may be witnessed, reported by the resident or an observer or identified when a resident is found on the floor or ground. Falls include any fall, no matter whether it occurred at home, while out in the community, in an acute hospital or a nursing home. Falls are not a result of an overwhelming external force (e.g., resident pushes another resident).
- An intercepted fall occurs when the resident would have fallen if he or she had not caught him/herself or had not been intercepted by another person – this is still considered a fall.

Background & Process

- Empira: Consortium for 14 years, 24 SNFs, 14 ALs, 4 comp
- Empira awarded 3-year MN DHS PIPP grant, begins 10/1/08
 - ~ This is not an evidence based study BUT a project implementing practices from evidence based studies in SNFs
 - ~ Practical applications from numerous research studies
 - ~ MDH designed PIPP to be a flexible program with the ability to pilot different initiatives and to adjust resources to pursue those that provide the best outcomes
 - ~ Goal: Reduce Measured CMS QIs; Falls, Depression & Anxiety, Decline in LL ADL, Decline in movement
 - ~ Reduction goal: 5% first year, 15% second year, 20% third year
- 16 SNFs, 4 companies participated in the Empira's MN DHS PIPP Fall Prevention project, grant ended 10/1/11

Results after 2½ years

- Prevalence of Falls (number of residents who have fallen) – decreased by 31%
- Incidence of Depression – decreased 20%
- Incidence Worsened ADLs – decreased 17%
- Incidence Worsened Room Move – decreased 12%

-
- Falls per 1000 resident days (number of falls that occurred) – decreased by 14%
 - Recurrent Falls – double digits to single digit

* Compared to a baseline from July 1, 2006 to June 30, 2007

**“I did then what I knew then,
when I knew better, I did better.”**

~ Maya Angelou



Non-nursing departments' responsibilities for falls prior to onset of Empira Fall Prevention Program:



Total team's responsibilities for fall prevention: after implementation of Empira Fall Prevention



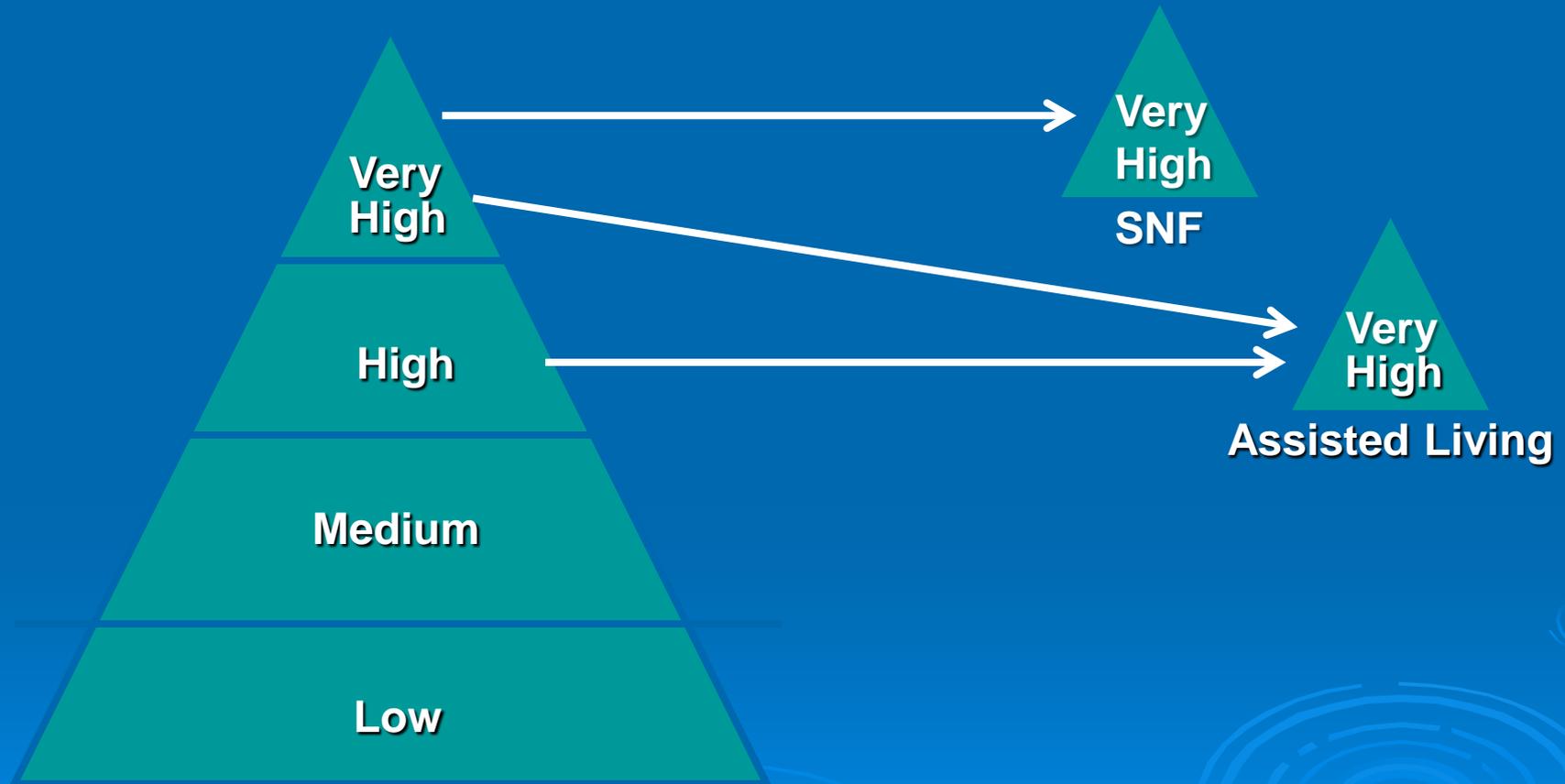
When you see a resident who has fallen, do the following:

“Check, Call, Care”

1. Immediately go to the resident, stay with the resident
2. If you are not a nurse, call for a nurse
3. Encourage the resident not to move, “Are you OK?”
4. Ask them, “What were you doing just before you fell?”
“What were you trying to do just before you fell?”
5. Begin getting answers to the “10 Questions”
6. Stay for the fall huddle, assist in getting a fall huddle started



Who is at Risk for Falling . . . When Everyone Is?



Risk of Falling for
General Population

Who is at Risk for Falling:

- **Low Risk:** 5 – 25 years old, physically active, mentally alert, few diseases and debilities
- **Medium Risk:** 25 – 45 years old, less physically active, less mentally alert, experiencing diseases and debilities
- **High Risk:** 45 – 65 years old, less physically active, less mentally alert, experiencing more diseases and debilities
- **Very High Risk:** Over 65 years old, less physically active, less mentally alert, experiencing more diseases and debilities

Person Centered “at risk” for falls on admission

1. Mr. SP, 74 y.o., lives alone, recently widowed, alcohol dependent, slightly confused, easily agitated, has multiple hematomas from many falls
2. Mrs. AT, 76 y.o., active, alert, visually impaired due to macular degeneration, slipped and fell on ice getting out of her son’s car, fx elbow & shoulder
3. Mr. BL, 83 y.o., early stage Lewy Body Dementia, symptoms increasing, can no longer be cared for by his wife in their home

Falls Admission Risk Assessment

1. On admission document the following statement, “Everyone is at high risk for falling. This client, Mrs. Morris, is at a high risk for falling because _____.”
2. Identify the individual’s specific risk factors for being at a high risk for falling:
 - ~ diagnoses, health conditions
 - ~ recent history of falls ← Why? Causes.
3. Consider psychological / emotional factors; grief, depression, confusion, disorientation, self imposed restriction of activity
4. Focus on lower-extremity balance and strengthening status
5. Individualize admission interventions: “to keep the resident safe and minimize falling.”

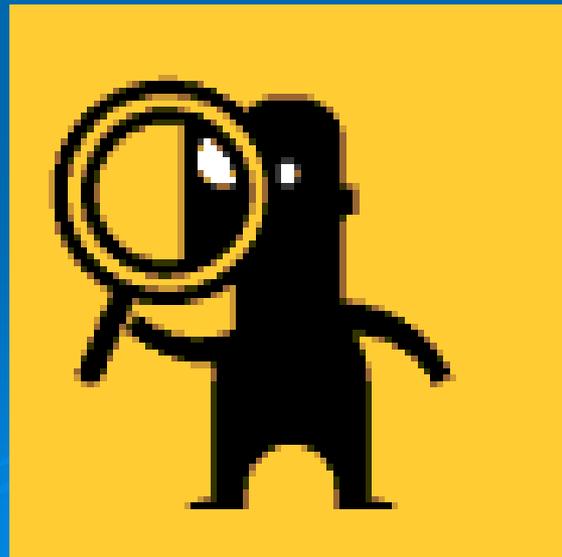
On Admission “Moving In” Fall Prevention Interventions



- Slow, careful orientation to room, apartment, routines
- Create rooms that most closely represent the client’s previous home environment, e.g. placement of personal items, bed, furniture – placement within room BUT be aware of and prevent clutter!
- Identify bedrooms so that resident will know it is theirs, e.g. signs, pictures, items, own bedspread & curtains
- Adapt apt/rooms to residents’ physical limitations, e.g. bed, door, nightstand, equipment placement, bed in relation to bathroom
- Create contrast, e.g. items to background area, toilet seat, call light
- Reduce uneven floor surfaces (rugs) especially at thresholds
- Set bed height to be correctly heighted to resident – mark it

What is root cause analysis?

- RCA is a process to find out what happened, why it happened, and to determine what can be done to prevent it from happening again.



Root Cause Analysis:

- Aiming performance improvement operations at root causes is more effective than merely treating the symptoms of problems.
- Problems are best solved by eliminating and correcting the root causes, as opposed to merely addressing the obvious symptoms with "scatter-gun approaches" to solutions.

Let's Apply the Same Principles of Assess & Treat

- Infections: causes & treatments
- Falls: causes & treatments

Steps to Root Cause Analysis:

Step One → Step Two → Step Three

- 1. What happened: Gather the clues and evidence by observation, examination, interviews and assessment**
- 2. Why did this happen? What conditions allowed this problem to exist? Investigate, assess and deduce. Determine the primary root causes or reasons for the fall based upon the aggregate data tracked.**
- 3. Implement corrective actions and interventions to eliminate the root cause(s) of the problem. What can be done to prevent the problem from happening again? How will it be implemented? Who will be responsible to do what? How will it be audited and evaluated?**

Step 1: Gather clues, evidence, data

- **Observation skills are critical!**
 - It's easy to miss something you're not looking for
- **Gather the clues:**
 - Look, listen, smell, touch
 - Question, interview, re-enact, huddle – immediately
 - Note placement of resident, surrounding environment and operational conditions
- **Protect the area around the incident:**
 - Secure the room/equipment immediately
 - Observation and recording begins immediately – while things are still fresh!

Post Fall RCA:

➤ Root Cause(s) Analysis:

- Why did they fall? →
- What were they doing before they fell? →
- But, what was different this time? →
- Where did they fall? →
- When did they fall? →
- What was going on when they fell?
- So, why did they fall? →

Step 2: Tools to determine RCA

- Check, Call, Care
- “10 Questions”
- Nurse Assessment
- Post Fall Huddle
- Staff Interviews
- Reenact

Fall Scene Investigation
(FSI) Report

- FSI Reports
- Audits (Noise, Light)
- Determining the (4Ps)

Falls Committee
Meeting

When you see a resident who has fallen, do the following:

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Determine Needs for the “4 Ps”

➤ Position:

- Does the resident look comfortable?
- Does the resident look bored, restless and/or agitated?
- Ask the resident, “Would you like to move or be repositioned?”
- Ask the resident, “Are you where you want to be?” Report to the nurse.

➤ Personal (Potty) Needs:

- Ask the resident, “Do you need to use the bathroom?”
- Ask if they’d like help to the toilet or commode. Report to the nurse.

➤ Pain:

- Does the resident appear in to be uncomfortable or in pain?
- Ask the resident, “Are you uncomfortable, ache or are in pain?”
- Ask them what you can do to make them comfortable.
- Report to the nurse.

➤ Placement:

- Is the bed at the correct height?
- Is the phone, call light, remote control, tissues, walker, trash can, water, urinal, all near the resident? Can they easily see them?
- Place them all within easy reach. Are they in contrast to background?

10 Questions at the time a resident falls. Stay with resident, call nurse.

- 1. Ask resident: Are you ok?**
- 2. Ask resident: What were you trying to do?**
- 3. Ask resident or determine: What was different this time?**
- 4. Position of Resident?**
 - a. Did they fall near a bed, toilet or chair? How far away?**
 - b. On their back, front, L side, or R side?**
 - c. Position of their arms & legs?**
- 5. What was the surrounding area like?**
 - a. Noisy? Busy? Cluttered?**
 - b. If in bathroom, contents of toilet?**
 - c. Poor lighting – visibility?**
 - d. Position of furniture & equipment? Bed height correct?**
- 6. What was the floor like?**
 - a. Wet floor? Urine on floor? Uneven floor? Shiny floor?**
 - b. Carpet or tile?**
- 7. What was the resident's apparel?**
 - a. Shoes, socks (non-skid?) slippers, bare feet?**
 - b. Poorly fitting clothes?**
- 8. Was the resident using an assistive device?**
 - a. Walker, cane, wheelchair, merry walker, other**
- 9. Did the resident have glasses and/or hearing aides on?**
- 10. Who was in the area when the resident fell?**

Internal Evidence & Clues:

- Vital Signs + Pain
- Neuro check
- Lab results
- Medications
- Diagnoses
- Vision and hearing conditions
- Cognitive, confusion, mood status
- Recent changes in conditions



Fall Huddle



- Performed immediately after resident is stabilized

- Charge nurse has all staff, working in the area of the fall, meet together to determine RCA

- Review “10 Questions” with staff

- Also ask staff:

- “Who has seen or has had contact with this resident within the last few hours?”

- “What was the resident doing?”

- “How did they appear? How did they behave?”

Fall Scene Investigation (FSI) Report

- Data collection tool used to investigate and determine RCA
- Completed soon after the fall occurs and/or during the fall huddle
- Completed by nurse in charge or on duty at time of the fall

Let's look at the FSI report



Fall Committee Meeting

- Meets weekly at same time and day
- All appropriate departments represented
- Charge nurse & nurse aide from fall site are “ad hoc”
- Have all relevant information available; FSI report, MAR, resident’s chart, fall huddle findings, hourly roundings
- Agenda:
 - New falls;
 - Review FSI report, huddle findings, review RCA
 - Review interventions – Do they match the RCA? Are they weak, intermediate, or strong interventions? Suggestions?
 - Status of residents from previous falls and interventions?
 - Are systems and operational changes needed?
- Status reports and audits; alarm reduction, med reduction, wake at will, Fall Summary, QI/QM reports, falls per 1000

External Evidence Indicating Causes of Falls:

- Noise levels (staff, alarms, tv)
- Busy activity
- Visual conditions – contrast, poor illumination
- Clutter: rugs, mats on floor
- Poor access ways around furniture
- Personal items, assistive devices are not seen or within easy reach
- Incorrect footwear
- Bed height incorrect



Internal Evidence Indicating Causes of Falls:

- Poor balance / poor mobility
- Sleep deprivation / fragmentation
- Medications (type & amt)
- Orthostatic B/P
- Endurance/strength
- Need the “4Ps”
- Visually challenged



Systemic Evidence Indicating Causes of Falls:

- Times of day
- Shift change
- Break / meal times; of staff & clients
- Days of week
- Locations of fall; in apt, hallways, common areas
- Types of fall: transferring, walking, reaching
- Staff times, staff assignments, # of staff
- Routines of services



Interventions

- **Definition of Medical Interventions: patients receive treatments or actions that have the effect of preventing injury, illness and/or prolonging life.**
- **Interventions must match the causative agents of the injury, illness, disease and/or conditions.**



Hierarchy of Actions and Interventions

- National Center for Patient Safety's "Hierarchy of Actions", a classification of corrective actions and interventions:
 - Weak – actions that depend on staff to remember their: training, policies, assignments, regulations, e.g. "remind staff to . . ." or "remind resident to . . ."
 - Intermediate – actions are somewhat dependent on staff remembering to do the right thing, but tools are provided to help the staff remember or to help promote better communication, e.g. lists, pictures, icons, color bands
 - Strong – does not depend on staff to remember to do the right thing. The tools or actions provide very strong controls, e.g. timed light switch, auto lock brakes
- * **To be most effective: interventions need to move to stronger actions rather than education or memory alone.**

Implementation Guide to Interventions & Solutions

1. What will you do to prevent this problem from happening again?
2. Do the interventions / solutions match the causes of the problem?
3. Who will be responsible for what?
4. How will the solutions affect other operations or people in your facility?
5. What are risks to implementing the solutions?
6. Move from weak to strong interventions.

Lesson learned:

if we can stop the noise,
then we can reduce the falls.



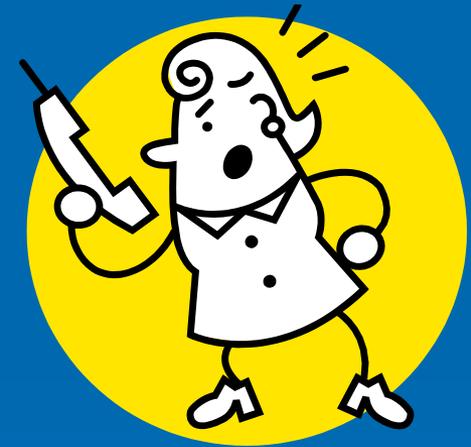
Noise: Where is it? Nurses stations, kitchens, breakrooms

What's causing it? Staff, alarms, pagers, TVs

When is it noisy? Shift change, meals, rounds



What are the sources of noise in your SNF, Assisted Living, client's home?

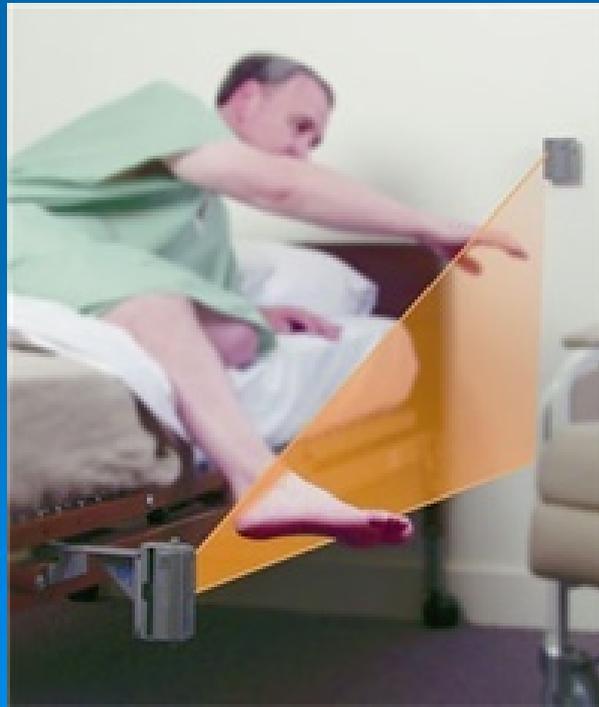


Do a Root Cause Analysis:

Q.: Why does the noise occur?

A.: Personal Alarm

Q.: Why did the alarm go off?



RCA: Why did the alarm go off?

“Because the person was moving.” – No!

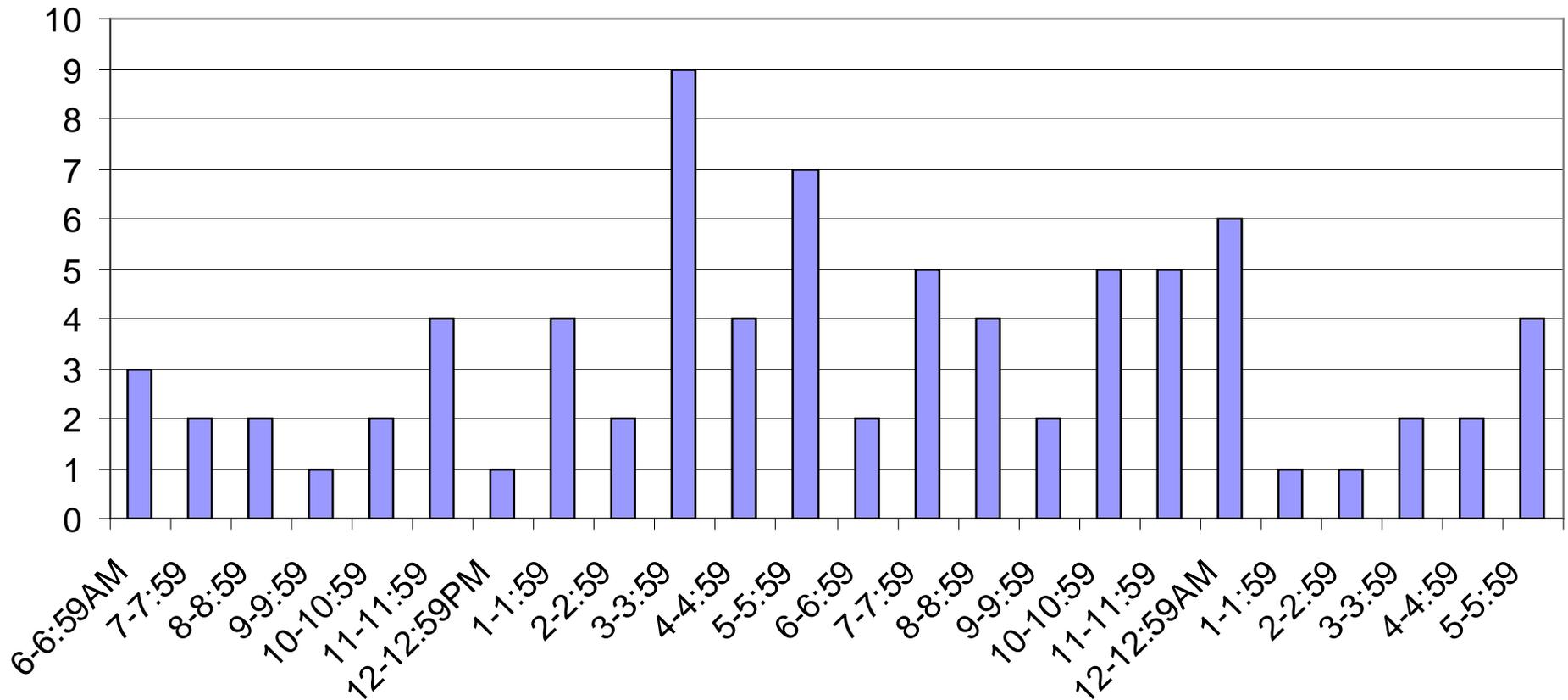
- RCA: What did the resident need, that set the alarm off?
- RCA: What was the resident doing just before the alarm went off?



Results of Alarm Reduction

Alarms being used at all times of the day.

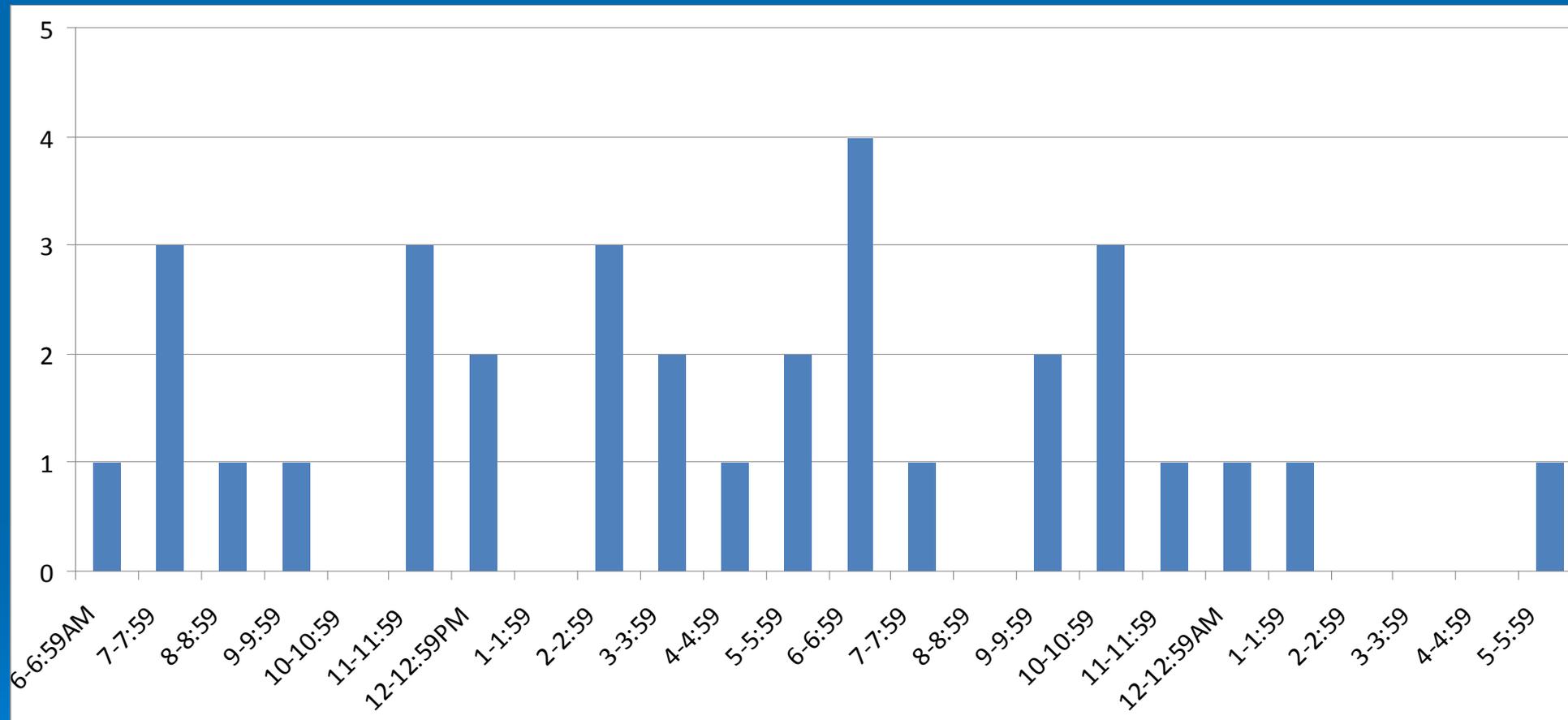
CARE CENTER #1: APR - JUNE 2010 FALL TIMES



X axis = times of the day the falls occurred; Y axis = # of falls.

TCU, FALL TIMES, JUNE - NOVEMBER 2010

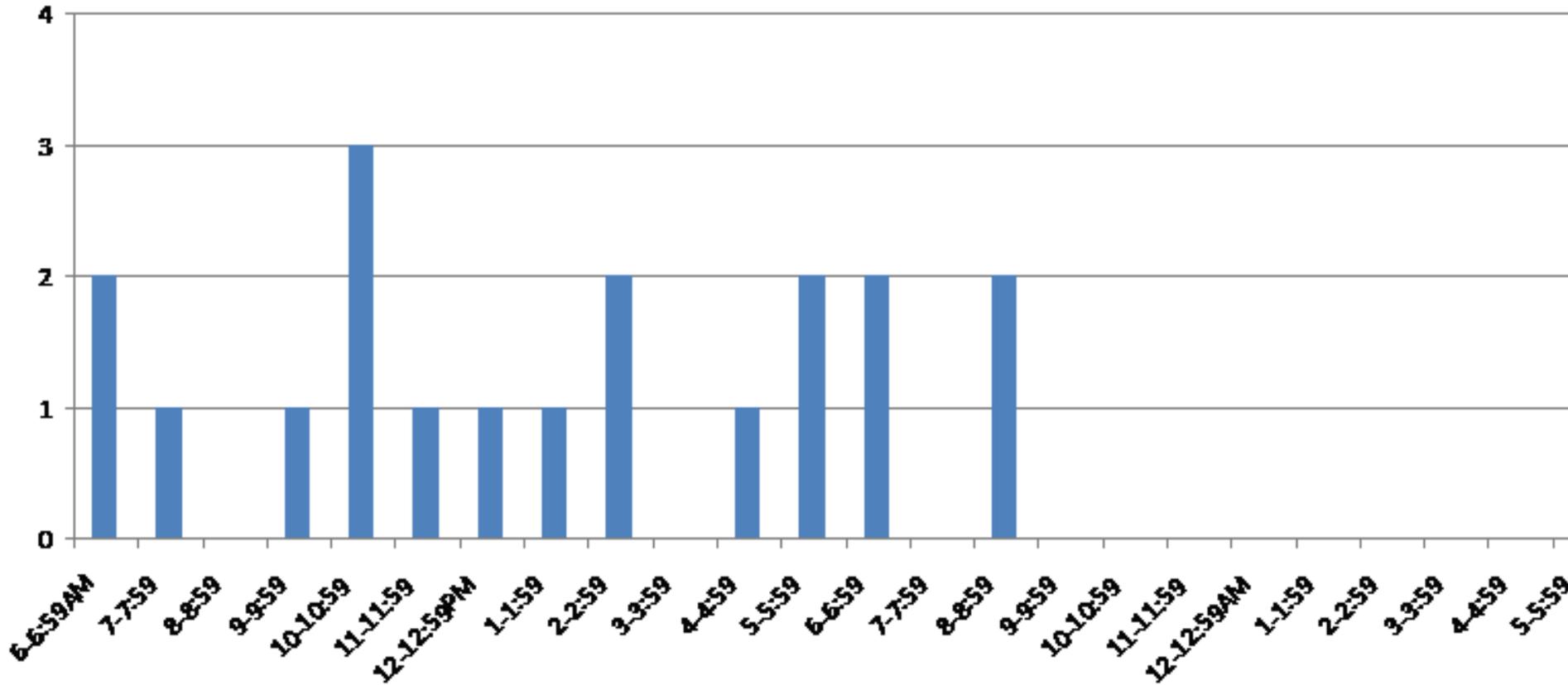
Beginning to reduce the number of alarms.



X axis = times of the day the falls occurred; Y axis = # of falls.

Care Center #2: Time of Falls April-June 2010

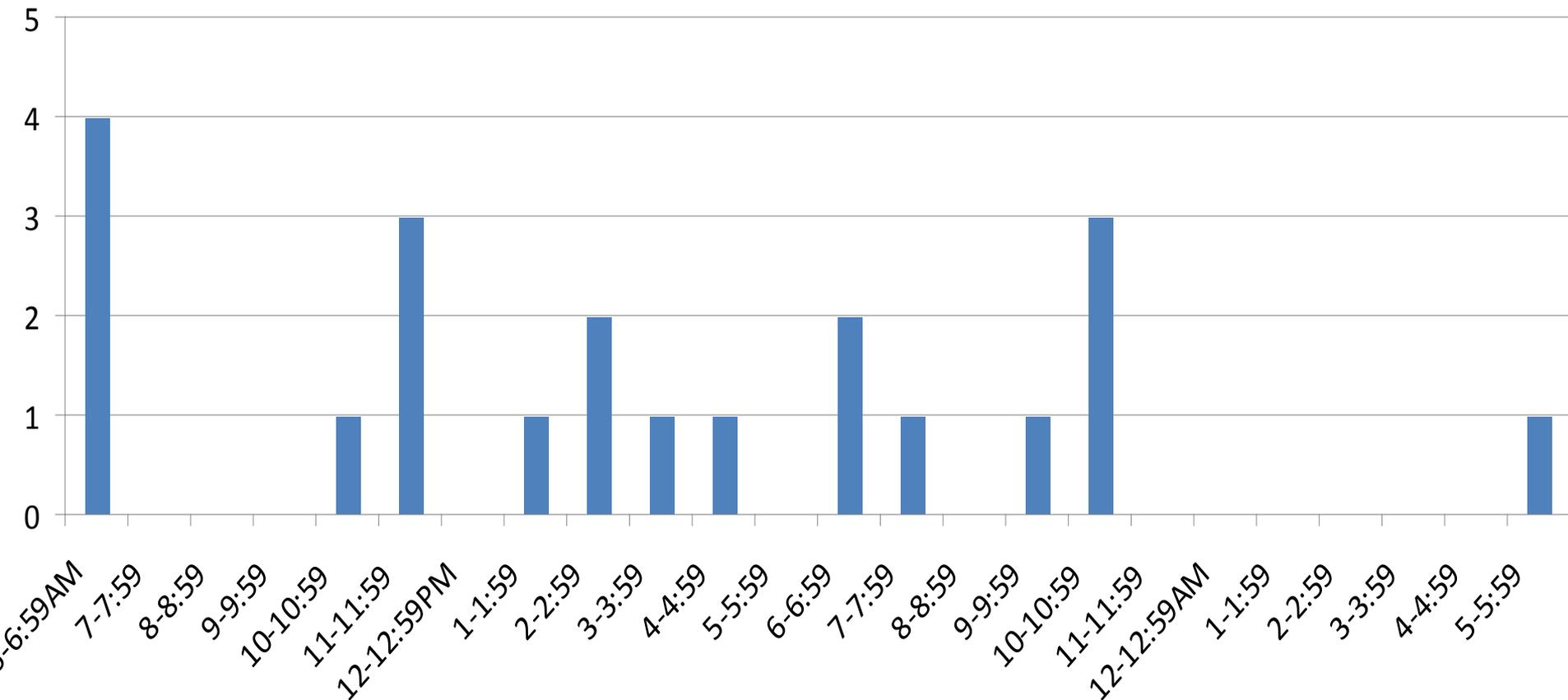
No alarms used during evening and night shifts.



X axis = times of the day the falls occurred; Y axis = # of falls.

TEAM 2, Fall Times, January - March 2010

No alarms used during night shift



X axis = times of the day the falls occurred; Y axis = # of falls.

Alarms Annul Our Attention



After you put something in the oven or microwave or clothes dryer, why do you set an alarm on (or the machine has an alarm) that goes off?

Contrast the Environment

Which is easier to see? Which is easier to see?



BEFORE



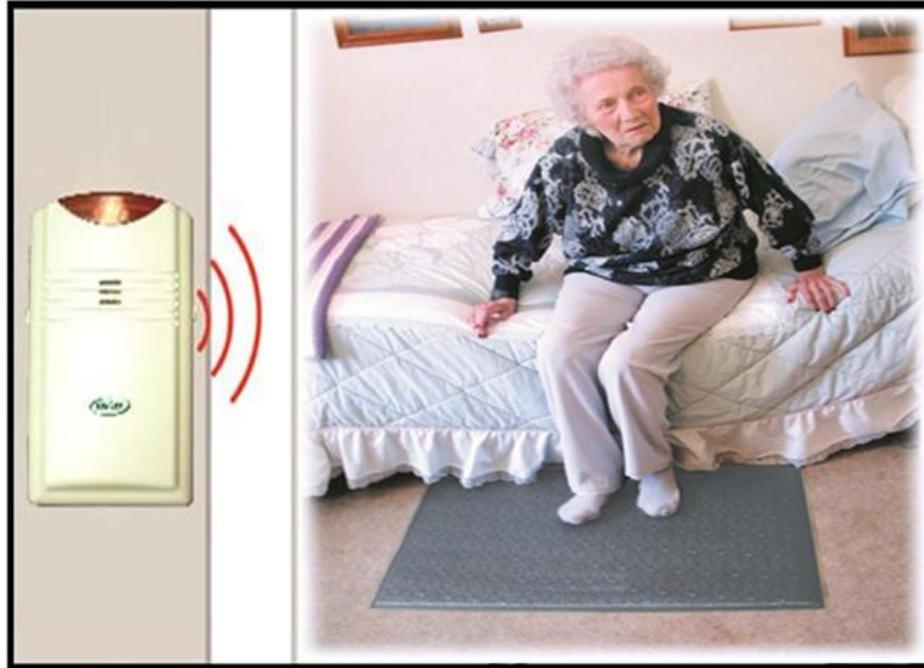
AFTER



Correct Bed Height – marked

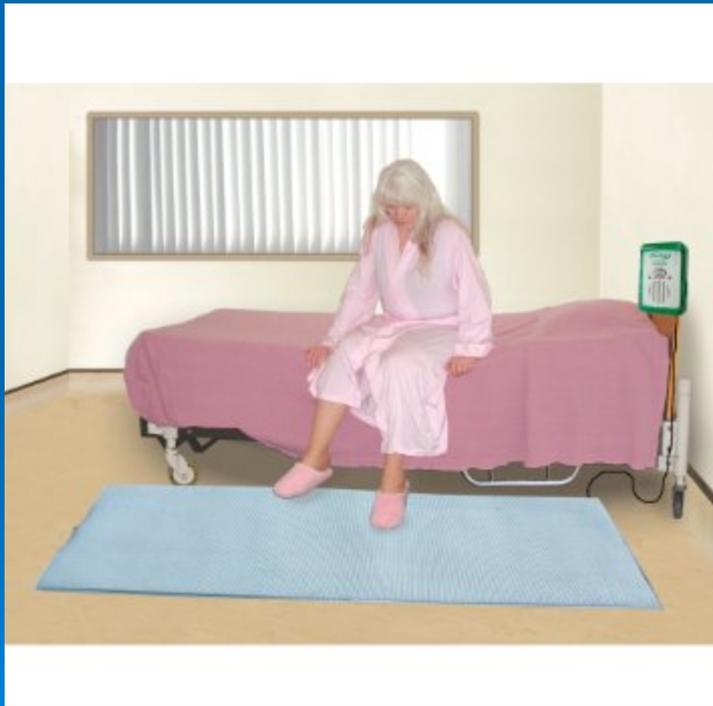
- Resident sits on the edge of the bed with their feet flat on the floor, hips are slightly higher than knees.
- Mark wall with tape to indicate top of mattress or top of headboard at this position
- Who does this?
 - Bed heights are checked and maintained by all staff every time they enter or leave a resident's room.

Mats/Rugs on Floor Reduction



United States Department of Veterans Affairs, Falls Tool Kit, Floor Mats:
Applegarth, S.P. [Tips and Tricks for Selecting a Bedsize Floor Mat.](http://www.patientsafety.gov/SafetyTopics/fallstoolkit/resources/other/Tips_and_Tricks_for_Selecting_a_Bedside_Floor_Mat.doc)
Website: [http://www.patientsafety.gov/SafetyTopics/fallstoolkit/resources/other/
Tips_and_Tricks_for_Selecting_a_Bedside_Floor_Mat.doc](http://www.patientsafety.gov/SafetyTopics/fallstoolkit/resources/other/Tips_and_Tricks_for_Selecting_a_Bedside_Floor_Mat.doc)

Mats/Rugs on Floor Reduction



- Mats & rugs creates an uneven floor surface
- Mat/rug does not go full length of bed
- Mat/rug can be confusing to clients with dementia
- Efficacy of mats has not been proven: VA study
- Presence of floor mat creates a fall hazard
- Staff, families and clients trip over mats & rugs

Hip Protectors

- Used by all residents with diagnosis of osteoporosis, hip/pelvis fractures, osteoarthritis
- Check Veterans Administration – “Hip Protector Implementation Tool Kit”
- VA tested efficacy of hip protectors – some found to be significantly less effective than others



Reasons for the Use of Unnecessary Meds



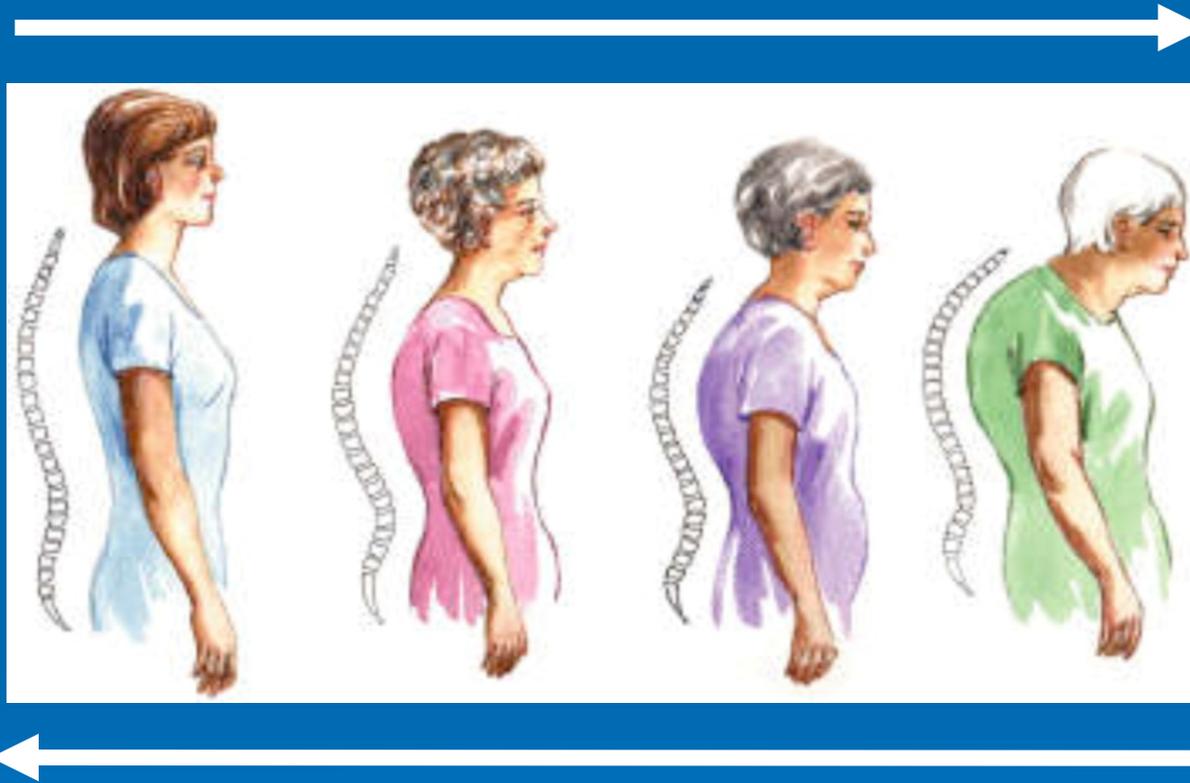
- Resident's condition changes
 - desire to help, to do "something"
- Overestimate of effectiveness of drugs; believe drugs will produce desired results
- Underestimate the side effects of drugs
- Lack of training in non-pharmacological approaches to treatment
- Patient/family demands
- Influences of media and drug manufactures

Medication Reduction

- Why so many meds?
- Reduce; type, dose, frequency, times, all.
- Do not disturb sleeping residents
- Explain side effects to client and family
- Are meds having the desired outcome?
- Tell care attendants:
 - Which client has been given a “water pill”
 - New meds or change in meds



External Clues → Internal Causes:



Gravity + sedentary life style + reduced mobility =
poor posture + ↑ risk for falls

Inactivity = Falls

- The more sedentary a person is, the more they increase their risk for falling.
- The less active a person is, the more they increase their risk for falling.



Faulty Assessment and Incorrect Root Cause to Preventing Falls:

When a resident moves = they fall down

Prevent movement or mobility = then you prevent the fall

No!

Improved Assessment and Correct Root Causes to Preventing Falls:

A resident has needs = and their needs set them into moving = and because they are weak = they fall down

Address the resident's needs = get them physically active (prevent immobility) = and you reduce their falls

Yes!

“Not Preventing Falls – Promoting Function,” Sarah H. Kagan, PhD, RN & Alice Puppione MSN, RN, Geriatric Nursing, Vol. 32, No. 1, p. 55 - 57. January/February 2011.

“Balance Exercise Reduces Risk of Falling”

- ***“Strength training alone may not effectively reduce falls since impaired balance is a stronger reason for falls than poor muscle strength.”***
- ***“The greatest effect in preventing falls were seen with exercises that challenged balance.”***

~ Journal of the American Geriatrics Society, December 2008

- **Create opportunities to stand and reach**
- **Incorporate balance into current activities & ADLs & newly created TR programs**

Standing, Reaching and Turning with ADL's

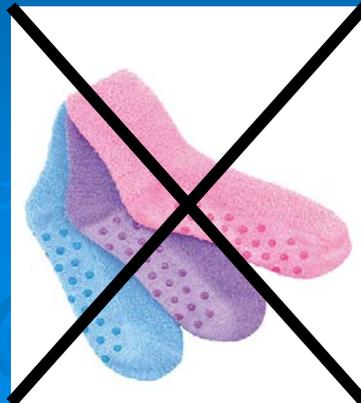


- Reach for towel at sink
- Turn to get toilet paper and do self hygiene
- Turn and reach for clothing items once set up
- Lift arms and lift head to assist with dressing
- When offering something to resident have them reach — meds, toothbrush, tissues, snack
- Encourage self propel wheelchair (works lots of muscles, posture, balance and independence)



Correct Footwear

- No gripper socks, no crepe soles
- Fully enclosed, slip resistant
- Correctly fitting – easy on, easy off!
- Footwear color contrasted to floor color
- Provide informational brochure



Fall Causes: Intrinsic - internal, Extrinsic - environmental, Systemic - operations

➤ Intrinsic

- Poor balance & strength, poor sleep, medications (type & amt) orthostatic B/P, (distance fall occurs from transfer surface)
 - continence status (toilet contents), pain, cognitive status, mood, depression, vision/hearing loss

➤ Extrinsic

- Noise (alarms, staff, TV) environmental contrasts, bed heights, room/bed assignment, placement of furniture & personal items
 - Mats / rugs, footwear, lighting, inconsistent floor surfaces

➤ Systemic

- Times of day, shift change/times, break times, days of week, locations of fall, types of fall, routine assignments (cleaning, stocking, repairing) staffing levels, consistent staff

Strong Interventions to Prevent Falls

- **Root Cause Analysis; performed by all staff**
- **Reduce Noise; staff talking, TVs, alarms,**
- **Reduce Congested Areas**
- **Reduce Clutter; floor mats, rugs**
- **Correct Beds Heights**
- **Fall Huddle**
- **Reduce Medications**
- **Contrast Environment**
- **Provide Opportunities to Balance**
- **Consistent Staffing: Know The Resident**

**Mahatma Gandhi's answer when asked,
"How to initiate change."**

**"First they ignore you,
Then they laugh at you,
Then they attack you,
Then you win."**

