

# **Falls Prevention in Long Term Care**

## Review and what's new

Fatima Ali Naqvi. MD., CMD.

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# *Learning Objectives*

- Case Presentation
- Introduction
- Causes
- Treatment
- Prevention
- Case discussion
- Conclusion

# Case Presentation

- ***Ms. Clara is a 90 years old nursing home resident who had a fall around 6:00 am this morning. She was trying to get up from the bed to go to the restroom.***



# Case Presentation

- She has a past medical history of
  1. Moderate dementia
  2. Hypertension
  3. Diabetes (Insulin dependent )
  4. Urinary incontinence
  5. Arthritis/ gait impairment
  6. CAD/ CHF
  7. COPD
  8. Anxiety

# Case Presentation

- Medications

1. Lasix
2. Ditropan
3. Lorazepam
4. Lexapro
5. Digoxin
6. Lantus, Insulin Sliding scale
7. Prednisone (Low dose)

# Case Presentation

- This is her second fall within the last 4 weeks.
- She slipped from her wheel chair last time without any injury
- Fall prevention measures were incorporated at that time
- What are the key elements to consider?

# Introduction

*Elderly population by 2030 - Almost **71 million** older American; **20% of US population***

**Health care spending** – *expected increase by 25% due to this shift*



# Leading causes of death in geriatrics

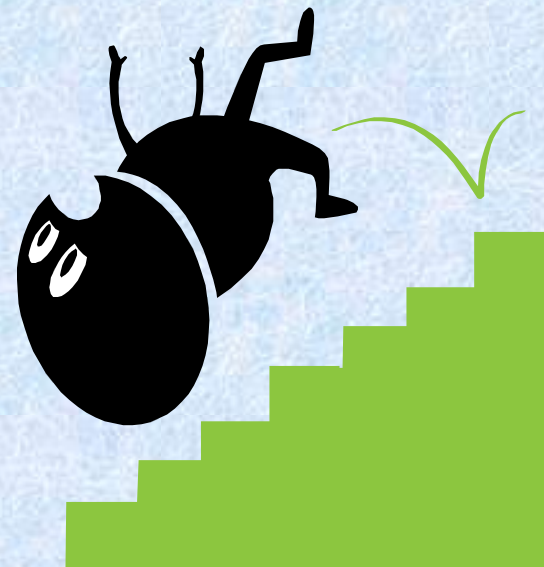
Rank	Cause of Death	Number of death	% of Death
1	Cardiac	607,265	33.8
2	Malignancy	390,122	21.7
3	Cerebrovascular	148,599	8.3
4	Chronic Respiratory	108,112	6.0
5	Influenza, pneumonia	57,282	3.2
6	Diabetes Type II	51,843	2.9
7	Alzheimer's	44,020	2.4
8	Unintentional Injuries	32,219	1.8
9	Kidney Syndromes	29,938	1.7
10	Septicemia	24,626	1.4

- Xu JQ, Kochanek KD, Tejada-Vera B. Deaths: Preliminary data for 2007. National vital statistics reports; vol 58 no 1. Hyattsville, MD: National Center for Health Statistics. 2009. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_01.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_01.pdf).

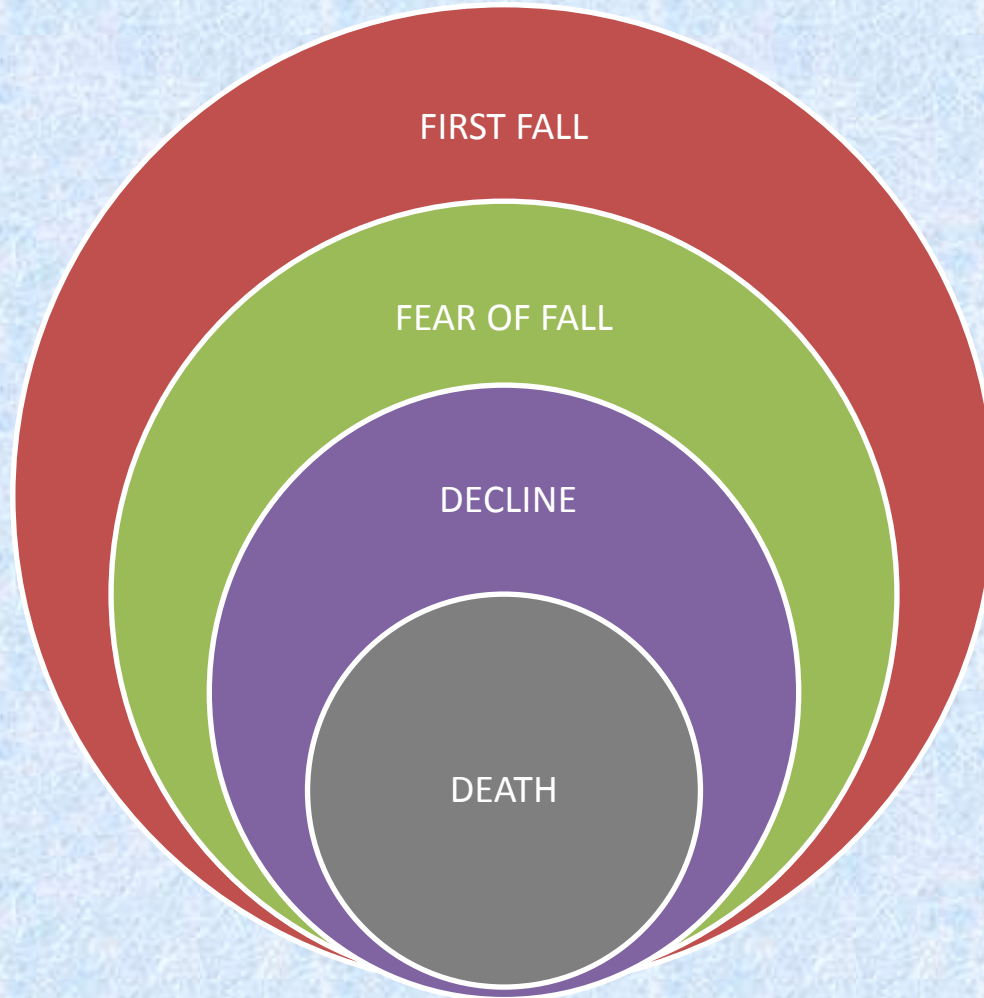


# First Fall- Red Flag

- First Fall- independent predictor
- Morbidity- Injury, Fracture
- Mortality- Death
- Multifactorial
- Multisystem involvement
- Rate and Risk of fall
- **Root Cause analysis**



# When to Worry? Soon after First Fall



# Evaluation- Intrinsic Risk factors

Recent Fall

AGE >75

Female

COGNITIVE  
IMPAIREMENT

Orthostatic

Balance / Gait/  
Co-morbidities

# Evaluation- Intrinsic Risk Factors

Functional  
Impairment

Dizziness/  
Vertigo

Visual  
Impairment

DRUGS

Foot wear

Urge  
incontinence

# Evaluation- Extrinsic Factors

Floor

Bed Rails

Light

Environment (clutter)

Grab bars

Restraints/ IV tubes/ Foley

# Medication



# High Risk Medications



AntiHTN

Antihistamines/  
Analgesics/Anticonvulsants

Psychotropic / Antiarrhythmic/Plavix/  
ASA/Warfarin

# Examination

## Acute injury/ Environment Factors

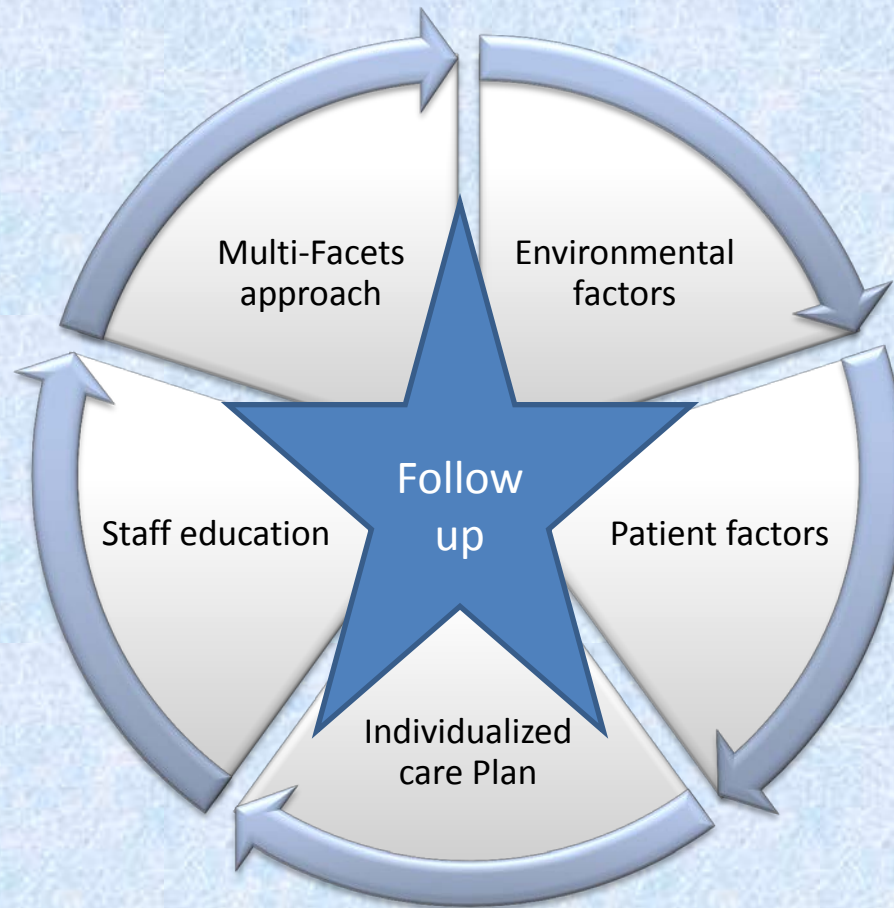
Patient  
Factors lead  
to the fall

Vitals/  
Postural BP/  
Vision/  
Balance/  
Gait

Functional  
assessment/  
Medication  
review



# Post Fall Plan



# Work up

- Lab
- Neuro Imaging
- Transfer to ER
- Single most important plan



Avoid Poly  
pharmacy

# Intervention with ongoing evaluation

## Initial Screening

- Fall/ Risk of Fall
- 1 OR >1 Fall in the last year
- Recent Hospitalization due to fall

## Assessment

- Intrinsic/Extrinsic Risk factors
- History and Exam
- Evaluate predisposing and precipitating factors

## Management

- Orthostatic BP, Gait, Mobility, Muscle strengthening exercises
- Avoid poly pharmacy
- Proper use of assistive device, shoes, glasses, Environment modification
- Ongoing assessment

However despite of all the hard work patient continues to fall most of the time!



# Evidence

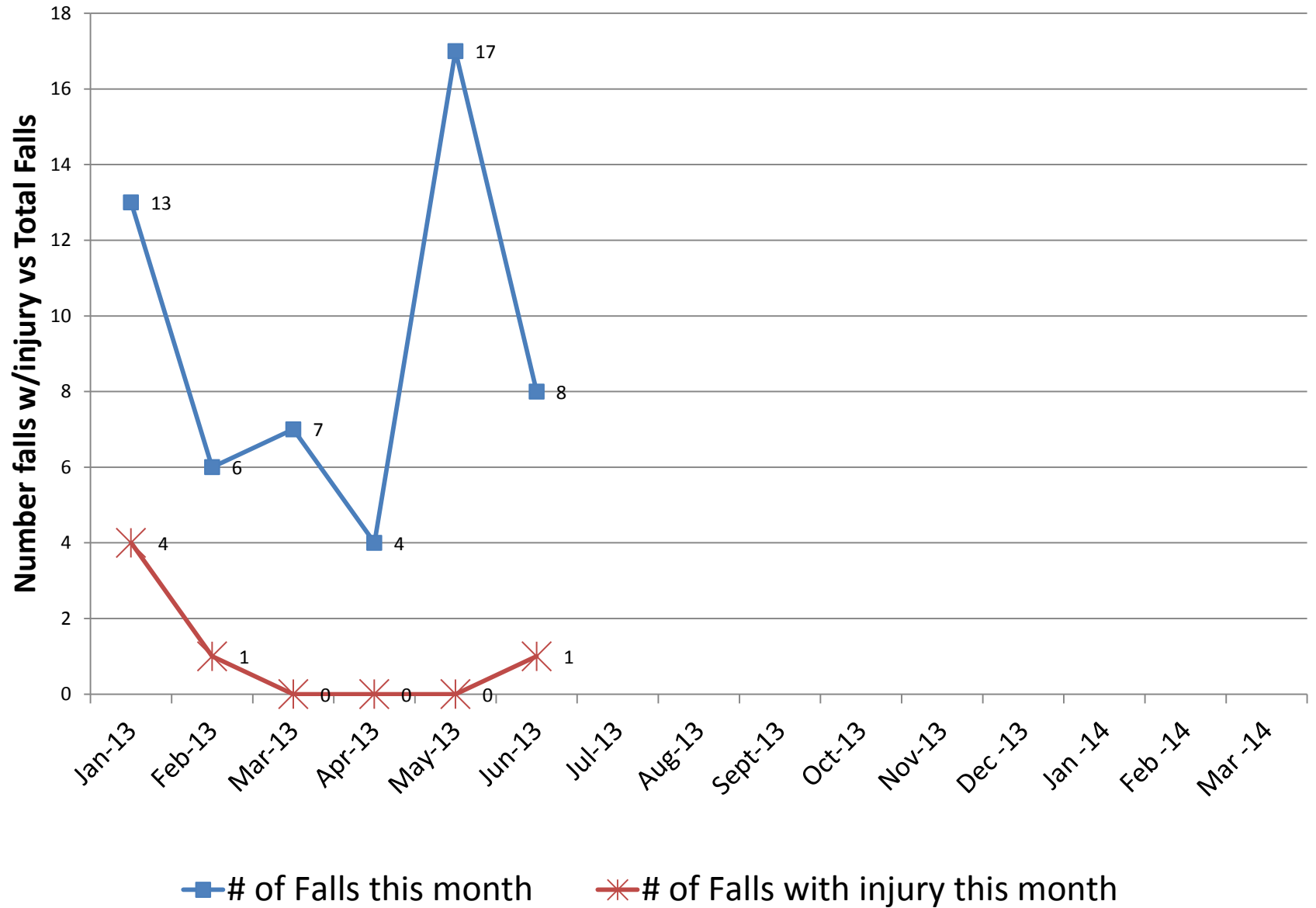
- Effective **Physical Rehabilitation**  
decreases further risks of fall, not the rate of fall
- *Osteoporosis therapy.*
- **Vitamin D and calcium supplement** decreases the rate of falls, not as much as the risks (Fractures)
- Bisphosphonates beneficial even in LTC
- Environmental modification
- *Individualized care plan works best*

# Long term care setting

- Timings of the falls
- Resident specific situation prior to fall
- Fall incident report – **Chief Detective task!**
- Staff education regarding the seriousness
- **Medication review**
- Post Fall assessment and plan done by the Nurse and MD / NP
- Follow up – Monthly Monitor in Quality Improvement meetings

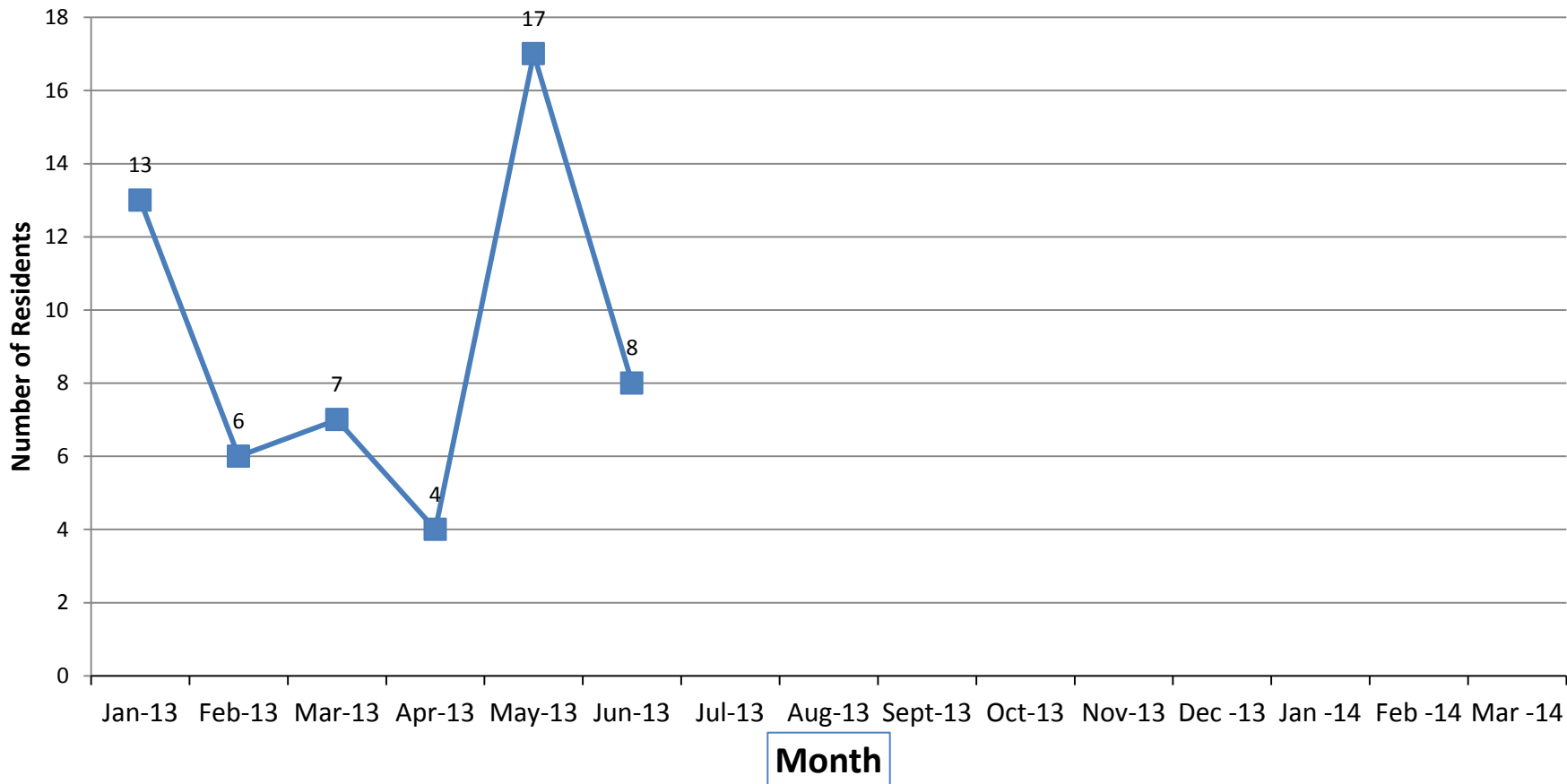


# Number of Falls with injury vs Number of Falls by Month



# Number of falls

## Improving Individual Patient Care

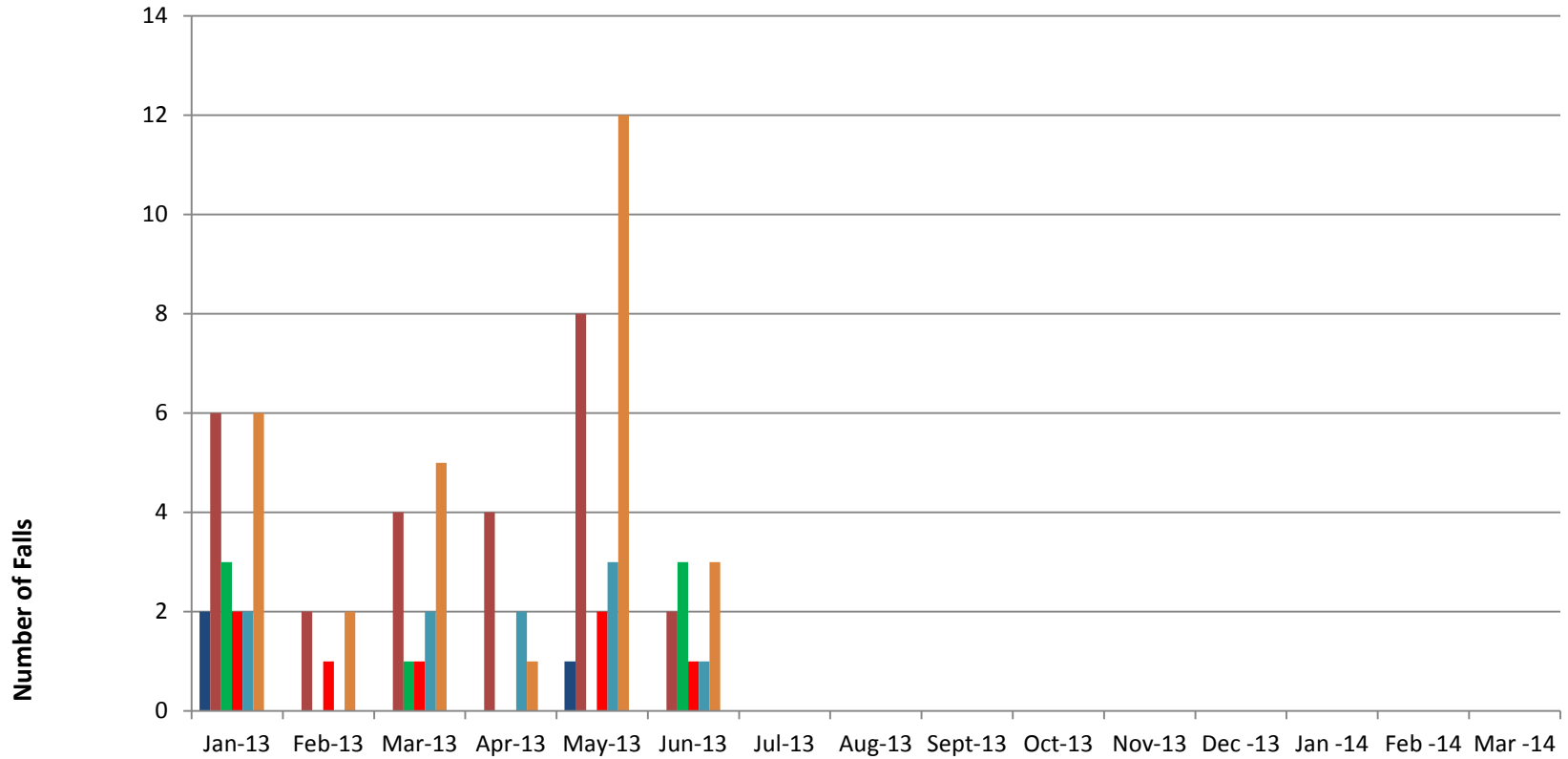




# Multifactorial factors- How to control ?



## Total Number of Falls by Circumstance Improving Individual Patient Care



- # of falls in or tranf. to the bathroom
- # of falls out of bed
- # of falls from chair/WC
- # of falls while walking
- # of falls occurring on Week End
- # of falls occurring on 3-11 or night shift
- Other

# Case Presentation

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# Case conclusion

- Past Medical History
- Medications
- Timings
- Location
- Resident factors
- Environmental factors
- Resident specific assessment and plan



# References

- Lubitz J, Cai L, Kramarow E, et al. Health, life expectancy and health care spending among elderly. *N Engl J Med*. 2003; 349:1048-1055.
- Stevens JA, Corso PS, Finkelstein EA, Miller TR. The cost of fatal and non fatal falls among older adults. *Inj Prev*. 2006;12:290-295.
- Centers for Disease Control and Prevention. Fatalities and injuries from fall among older adults—United States, 1993-2003 and 2001-2005. *MMWR Morb Mortal Wkly Rep*. 2006;55:1221-1224.
- Vellas BJ, Wayne SJ, Romero LJ, Baumgartner RN, Garry PJ. Fear of falling and restriction of mobility in elderly fallers. *Age Ageing*. 1997;26:189-193.
- Grey-Micelli D. In: Copezuti E, Zwicker, D Mezey M, Fulmer, T eds. *Preventing falls in acute care: Evidence-based geriatric nursing protocols for best practice*. 3rd ed. New York, NY: Springer Publishing Company, Inc.; 2008:161-198.  
[http://consultgerirn.org/topics/falls/want\\_to\\_know\\_more](http://consultgerirn.org/topics/falls/want_to_know_more)
- Tinetti ME. Preventing falls in elderly persons. *N Engl J Med*. 2003;348:42-49.
- Tinetti ME, Inouye SK, Gill TM, Doucette JT. Shared risk factors for fall, incontinence, and functional dependence. *JAMA*. 1995;273:1348-1353.
- Leipzig RM, Cumming RG, Tinetti ME. Drugs and falls in older people: A systematic review and met-analysis: I. Psychotropic drugs. *J Am Geriatr Soc*. 1999;47:30-35.
- Stevens M, Holman CD, Bennett N. Preventing falls in older people: impact of an intervention to reduce environmental hazards in home. *J Am Geriatr Soc*. 2001;49:1442-1448.
- Copezuti E, Maislin G, Strumpf N, Evans LK. Side rail use and bed related fall outcome among nursing home residents. *J Am Geriatr Soc*. 2002;50:90-96.
- Tinetti ME, Multifactorial fall-prevention strategies: Time to retreat or advance. *J Am Geriatr Soc*. 2008; 56:1563-1570.
- Chang JT, Ganz DA. Quality indicators for fall and mobility problems in vulnerable elders. *J Am Geriatr Soc*. 2007;55(suppl 2):S327-S334.
- Guideline for the prevention of falls in older persons. American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention. *J Am Geriatr Soc*. 2001;49:664-672.
- Coussement J, De Paepe L, Schwendimann R, et al. Interventions for preventing falls in acute- and chronic care hospitals: A systemic review and meta-analysis. *J Am Geriatr Soc*. 2008;56: 29-36.

# Thank you

- Questions?

