

State of Science Update and Shifts on National Guidelines and Policy

Pat Quigley, PhD, MPH, ARNP,
CRRN, FAAN, FAANP
Nurse Consultant
Retired Associate Director, VISN 8 Patient Safety Center; Retired Associate Chief for Nursing Service/Research
email: pquigley1@tampabay.rr.com

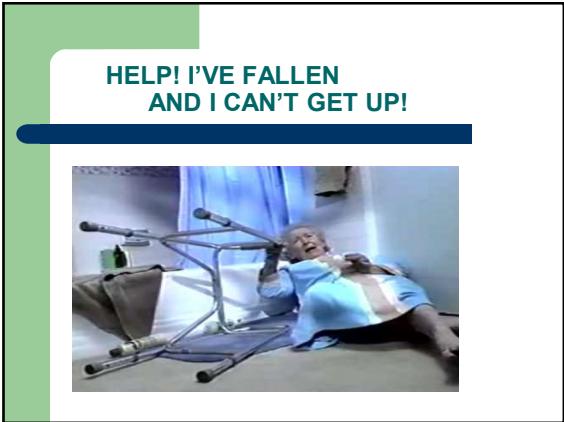
Overview

1. Update the burden of falls and state of science related to patient falls and fall-related injury.
2. Summarize updated national guidelines to shape fall and fall injury prevention practices
3. Differentiate Prevention vs. Protection vs. Surveillance.

Preventing Falls: Call for Action

- Transform healthcare for frailty associated with old age.
- Prevent falls identified as an effective strategy.
- BUT, major area for improvement in routine practice.

2003: IOM: Priority areas for national action: transforming health care quality

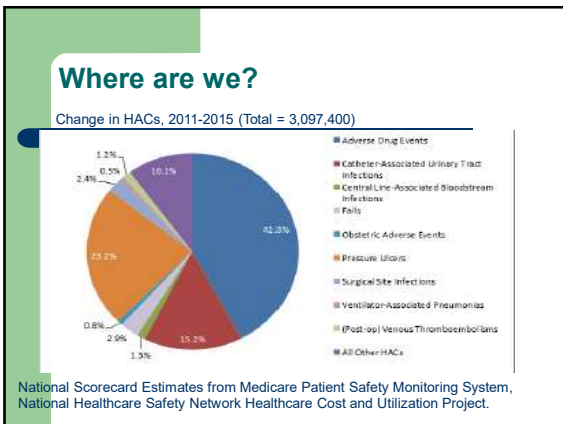


Compelling Evidence to Support Change: CDC

- **Every second of every day** in the US an older adult falls, making falls the number one cause of injuries and deaths from injury among older Americans.
- In 2014 alone, older Americans experienced 29 million falls causing seven million injuries and costing an estimated \$31 billion in annual Medicare costs, according to a new report published by the Centers for Disease Control and Prevention (released 09/26/16)
- With more than 10,000 older Americans turning 65 each day, the number of fall-related injuries and deaths is expected to surge, resulting in cost increases unless preventive measures are taken.
- [file:///Users/owner/Desktop/2016%20Falls%20are%20leading%20cause%20of%20injury%20and%20death%20in%20older%20Americans%20%20%20%20newsroom%20%20%20%20CDCwebarchive Accessed 01/01/17](#)

Estimates of Falls, Preventability, Cost

<ul style="list-style-type: none"> • 2010: Total HAC: \$5,980,000 • Falls: 200,000 • Falls (Baseline 2010 rate: 7.9 per 1,000 discharges) • Preventability: 25% (2010/2011) • Goal at launch of PFP: 50% • Combined Goal (Preventability X Goal): 12.5% • 2014 HAC Reduction Goal: 25,000 (fewer harm in 2014 compared to 2010) 	<p>Projected Cost Savings (\$7,234 per HAC) and Life Savings (0.055 mortality risk) if goals met:</p> <ul style="list-style-type: none"> • \$180,050,000 cost savings • 1,375 lives saved <small>2013 Annual Hospital-Acquired Condition Rate and Estimates of Cost Savings and Deaths Averted From 2010 to 2013, Rockville, MD, Agency for Healthcare Research and Quality, October 2015. AHRQ Publication No. 15-0095-EF http://www.ahrq.gov/professionals/quality-patient-safety/pfp/index.html</small>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



Interim 2014 AHRQ National Scorecard Data on HACs (Calculated November 19, 2015)

- Total HACs: 3,967,000 121 HACs/1,000 DCs
- Total Falls HACs: 260,000 7.9/1,000 DCs

No Change in Percent compared to 2010

HHS May 7, 2014: NDNQI reported 14.7 decrease in Falls AND Trauma 2010- 4th Quarter 2013

<https://innovation.cms.gov/Files/reports/patient-safety-results.pdf>; accessed Jan 11, 2017

2019 PfP HIIN Goal


Hospital Improvement and Innovation Networks will work to achieve a 20% decrease in overall patient harm and a 12% reduction in 30-day hospital readmissions as a population-based measure from the 2014 baseline.

Falls: The Big Picture

- > 1 million patient falls occur annually.
- 20% of all hospital inpatients in the US fall at least 1X during hospital stay.
- 30% result in injury.
- 10% result in serious injury—fracture, head trauma.
- Over 95% of hip fractures are caused by falls.
- Patients >75 years now comprise 22% of hospital admissions.

Who dies if they fall?

- Very young and very old



The image contains two side-by-side photographs. The left photo shows a close-up of a baby's face, looking towards the camera. The right photo shows an elderly woman wearing a straw hat and a patterned shirt, tending to a garden of pink flowers.

2001 report, "Making Health Care Safer: A Critical Analysis of Patient Safety Practices,"

- became a cornerstone of other efforts (such as the National Quality Forum's 34 "Safe Practices for Better Healthcare" list);
- ranked safety practices by strength of evidence;
- brought significant resources invested in efforts to improve safety;
- changed almost all health-care delivery organizations to regard safety as a *primary strategic priority*.

Patient Safety Practice (PSP)

- A PSP is defined as a type of **process or structure** whose application reduces the **probability** of adverse events resulting from exposure to the health care system across a range of diseases and procedures.
*2001 "Making Health Care Safer" Report
- Q: How many of you are measuring **structure or process**? Specific to Fall and Injury Prevention

Making Health Care Safer II 2013

Co-Principal Investigators:

- Paul G. Shekelle, M.D., Ph.D., RAND Corporation Evidence-based Practice Center
- Robert M. Wachter, M.D., University of California, San Francisco
- Peter J. Pronovost, M.D., Ph.D., Johns Hopkins University

- Since 2001 report, a vast amount of new information on PSPs has emerged; **more agreement is now evident on *what constitutes evidence of effectiveness and the importance of implementation and context.***

Obj: To review important patient safety practices for evidence of effectiveness, implementation, and adoption.

Results: From an initial list of over 100 patient safety practices, the stakeholders identified 41 practices as a priority for this review: 18 in-depth reviews and 23 brief reviews. Of these:
20 PSPs had their strength of evidence of effectiveness rated as at least "moderate".
26 PSPs had at least "moderate" evidence of how to implement them.

Results con't:

- 10 practices were classified by the stakeholders as having sufficient evidence of effectiveness and implementation and should be “strongly encouraged” for adoption.
- An additional 12 practices were classified as those that should be “encouraged” for adoption. This includes **multicomponent interventions to reduce falls**.

Chapter 19: Preventing In-Facility Falls

- Cochrane Reviews and Oliver, et al, 2006 (updated 2010) Systematic Literature Reviews
Isomi M. Miake-Lye, B.A.; Susanne Hempel, Ph.D.; **David A. Ganz, M.D.**, Ph.D.; Paul G. Shekelle, M.D., Ph.D.
- **17 Multifactorial Trials between 1999-2009** were reviewed.
- **Supplemented by 3 more recent large scale studies.**

Cochrane Review though...

- The most recent Cochrane review notes a “**striking variability in type, targeting, intensity, and duration**” within the fall prevention programs and *does not attempt to draw conclusions about which components might be most effective.*

Hospital Falls: we know.... (D. Oliver, et al. Falls and fall-related injuries in hospitals. 2010, Nov. Clinics in Geriatric Medicine.)

- 30% to 51% of falls result with some injury.
- 80% - 90% are unwitnessed.
- 50%-70% occur from bed, bedside chair (suboptimal height) or transferring between the two; whereas in mental health units, falls occur while walking.
- Risk Factors: Recent fall, muscle weakness, behavioral disturbance, agitation, confusion, urinary incontinence and frequency; prescription of "culprit drugs"; postural hypotension or syncope.

Most effective, fall prevention interventions should be targeted at both point of care and strategic levels

- Best Practice Approach in Hospitals:
 - Implementation of safer environment of care for the whole patient cohort (flooring, lighting, observation, threats to mobilizing, sign posting, personal aids and possessions, furniture, footwear).
 - Identification of specific modifiable fall risk factors.
 - Implementation of interventions targeting those risk factors so as to prevent falls.
 - Interventions to reduce risk of injury to those people who do fall.

(Oliver, et al., 2010, p. 685)

Most common components of successful interventions (Oliver, et al)

- Post fall review: to assess potential reasons for a specific instance of a fall and to remediate possible contributing factors.
- Patient education.
- Staff education.
- Footwear advice.
- Scheduled and supervised toileting.
- Medication review: to assess for use of medication(s) that can affect mental alertness and balance.

Patient-specific risk factors include:

- Age (particularly age over 85, sometimes called the "oldest old"),
- Male gender,
- History of a recent fall,
- Muscle weakness,
- Behavioral disturbance,
- Urinary incontinence or frequency,
- Certain medications, and
- Postural hypotension or syncope.

Why PSP should work?

- First underlying assumption of each trial is the stated or implied understanding that falls have a **multifactorial etiology** and that attention to **multiple risk factors will be more effective than an intervention that targets any single risk factor.**
- A fall is usually the result of **interactions** between patient-specific risk factors and the physical environment.

What should work?

- Given the **multifactorial nature of falls**, a patient safety practice designed to **assess and remediate multiple factors** is believed to be more likely to be effective.
- **Q: How many of you are measuring reduction of actual fall risk factors (patient and / or environment)?**

How Has the Patient Safety Practice Been Implemented and in What Contexts?

- The ways in which fall prevention programs have been implemented and a description of contexts are lacking in most reports.
- Little description of structural organizational characteristics, existing infrastructure, external factors (patient safety culture, teamwork, or leadership).

Effect of Context on Effectiveness

- The study by Neily and colleagues (2005) was the only one identified that explicitly assessed the effect of context on effectiveness.
- Across 34 Veterans Affairs health centers, a mix of acute care and long-term care facilities, leadership support was cited as one of the strongest factors for success. (Variables were leadership support, teamwork skills, and useful information systems.)

It's Confirmed:

- Multi-component in-facility fall prevention programs result in statistically and clinically significant reductions in rates of falls.

Aging Hospital Population: 2010

- 45% of the inpatient hospital population in the US was 65 years of age and older,
- among whom 19% were ages 75-84, and
- 9% were 85 years and older.

Levant, S., Chari, K., & DeFrances, C.J. (2015). Hospitalizations for patients age 85 and over in the United States, 2000-2010. NCHS Data Brief. No. 182. Available at: <http://www.cdc.gov/nchs/data/databriefs/db182.htm>.

JAGS 2015

- Characteristics and effectiveness of fall prevention programs in nursing homes: A systematic review and meta-analysis of RCTs
- Vlaeyen, E., Coussement, J., et al (2015), 63:211-221

Methods

- Subgroup of nursing homes: provide 24 hr surveillance, personal care, and limited clinical care for persons typically elderly and infirmed.
- 22,915 NH residents.
- 13 studies (RCTS: 7-Europe, 4 UK, 4 US, 2 Australia/Oceania) met inclusion criteria:
- 6 fall prevention programs were single interventions, 1 was multiple interventions, and 6 were multifactorial.

Slide 29

LA2

What is JAGS? Can we spell out?

Lucia Austin-Gil, 9/6/2016

Definitions

- Single: one intervention component provided to residents (staff training and education, medication intervention, or Vitamin D Supplement).
- Multiple (1 study): two or more intervention components not customized to individual fall risk (incontinence care and low intensity, functionally oriented exercise program).
- Multifactorial: two or more intervention components customized to each resident's fall risk (O₂, exercise, vision, footwear, etc).

Outcomes

- Number of falls reported in 12 studies.
- Number of fallers reported in 7 studies (2 multifactorial studies).
- Number of recurrent fallers reported in 4 multifactorial studies).

Meta-analysis Results

- Significantly fewer recurrent fallers in the intervention groups (4 studies), no significant effect of the intervention on fallers (6 studies) or falls (10 studies).
- Multifactorial interventions significantly reduced falls (4 studies) and the number of recurrent fallers (4 studies); whereas, single or multiple interventions did not.
- Training and education showed a significant harmful effect in the intervention group on the number of falls (2 studies).

Slide 31

LA3

What is OH?

Lucia Austin-Gil, 9/6/2016

Falls prevention in Nursing Homes. C. Becker & K. Rapp. 2010, Nov. Clinics in Geriatric Medicine.

- Reducing the risk of falling can positively affect residents' quality of life to a considerable extent.
- Mean Fall rate 1.7 falls per person-year (range 0.6-3.6), considerably higher than community-based fall rate (mean 0.65; range, 0.3-1.6).
- In a facility with 100 beds, a fall can be expected about every other day.

Epidemiology: Around the World

- More than three-fourths of all falls occur in rooms or bathrooms of residents.
- Sit-to-stand or stand-to-sit transfers were associated with a higher percentage of falls (42%) than walking (35%).
- Nearly 25% of falls required MD or hospitalization.
- Falls in LTC result in more serious complications: 10-25% resulting in fractures or lacerations; most serious – hip fractures.
- Other injuries (fracture of pelvis, upper extremity, spine or skull) result in considerable suffering.

Risk factors

- Risk factors: All are high risk (unless immobile or in coma).
- Well-established risk factors:
 - Muscular weakness, balance and gait deficits, poor vision, delirium, cognitive and functional impairment, orthostatic hypotension, urinary urge incontinence, and nocturia.
 - Comorbidities (dementia, depression, stroke, PD) may lead to attention deficits, executive dysfunction, or visual field loss – result in higher propensity to fall.
 - Side effects and interactions of drugs.
- Risk of fractures lowest in residents with the most limited physical function.
- Risk for fracture greatest in the immediate period after admission (1 mo).

Slide 36

LA4

what is PD?

Lucia Austin-Gil, 9/6/2016

Clinical Judgment

- Evidence-based Practice
 - Versus
- Results of Scientific Inquiry

Where are we?

**BEST PRACTICES:
PREVENTION**

LAS Guidelines 2010

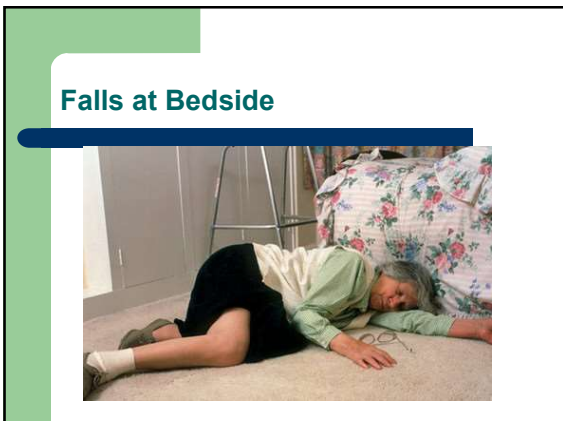
Assessment	Interventions
1. Obtain relevant medical history, physical examination, cognitive and functional assessment	1. Initiate multifactorial/multicomponent intervention to address identified risk(s) and prevent falls: Obtain relevant medical history, physical examination, cognitive and functional assessment
2. Determine multifactorial fall risk:	
a. History of falls	a. Minimize medications
b. Medications	b. Provide individually tailored exercise program
c. Gait, balance and mobility	c. Treat vision impairment (including cataract)
d. Visual acuity	d. Manage postural hypotension
e. Other neurological impairments	e. Manage heart rate and rhythm abnormalities
f. Muscle strength	f. Supplement Vitamin D
g. Heart rate and rhythm	g. Manage foot and footwear problems
h. Postural hypotension	h. Modify the home environment
i. Feet and footwear	i. Provide education and information
j. Environmental hazards	

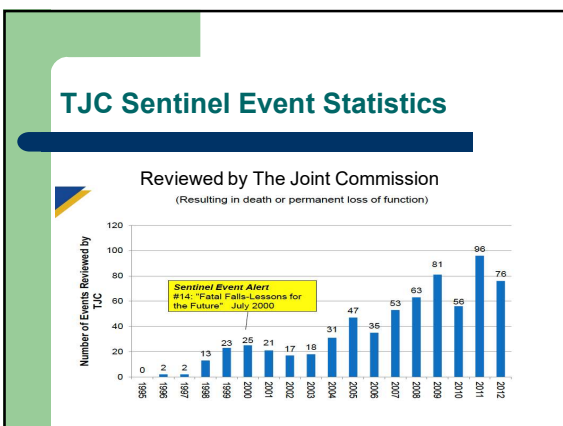
Slide 39

LA5

What is AGS?

Lucia Austin-Gil, 9/6/2016





2005-2016: Falls Sentinel Event

- #1: Wrong-pt, Wrong site, wrong procedure: 1225
- #2: Unintended Retention of Foreign Bode: 1167
- #3: Delay in Treatment: 1053
- #4: Suicide: 972
- #5: Op/Post-op Complication: 902
- #6: Falls: 833

(Falls Events 2014-93, 2015-95, 2016-52)

**2007 JCAHO Standard:
Fall Prevention Program and Now**

- Establish a Fall Prevention Program
- Evaluation
- Interventions
- Educate Staff
- Educate Patients and Families
- Program Evaluation
- Sept 28, 2015: TJC Sentinel Alert: Preventing Falls and Fall Injuries

Suggestions from TJC

- Lead efforts to raise awareness of the need to prevent falls resulting in injury
- Establish an interdisciplinary falls injury prevention team or evaluate the membership of the team in place
- Use a standardized, validated tool to identify risk factors for falls, assess fall and injury risk factors
- Develop an individualized plan of care based on identified fall and injury risks, and implement interventions specific to a patient, population or setting

43

Suggestions con't

- Standardize and apply practices and interventions demonstrated to be effective, including:
 - A standardized hand-off communication process
 - One-to-one education of each patient at the bedside
- Conduct post-fall management, which includes: a post-fall huddle; a system of honest, transparent reporting; trending and analysis of falls which can inform improvement efforts; and reassess the patient
 - Conduct a post-fall huddle
 - Report, aggregate and analyze the contributing factors on an ongoing basis to inform improvement efforts.

44

Shifting

- From Reducing Falls to Protecting from Fall Related Injury.
- Integrate Injury Risk / History on Admission.
- Implement Universal Injury Reduction Strategies.
- Implement Population-Specific Fall Injury Reduction Interventions.

Targeted Interventions: Prevention + Protection + Surveillance

Prevention

- The act of preventing, forestalling, or hindering.

Plus Protection

- Shield from exposure, injury or destruction (death).
- Mitigate or make less severe the exposure, injury or destruction.

Plus Surveillance

- Detection.

Discussion – Questions?

- I hope this helps!

