Moving Beyond Direct Patient Care: An Expanded Role for Physical Therapy in Inpatient Fall Risk Reduction

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CAPTURE Falls
Collaboration And Proactive Teamwork Used to Reduce Falls

• Improve structure and coordination of organizational processes
  • Standardize definitions for reporting & benchmarking
  • View fall risk reduction as an organizational goal that multiple teams coordinate to achieve

http://teamstepps.ahrq.gov/
Acknowledgement: Research Team

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17 Small Rural Hospitals in Nebraska and their interprofessional fall risk reduction coordinating teams
Session Learning Objectives

After completing this session, you will be able to:

1. Explain the rationale for the use of a multiteam system (MTS) to decrease inpatient fall risk in healthcare organizations.

2. Identify how the knowledge and skills of physical therapists (PTs) and physical therapist assistants (PTAs) can be integrated across components of the MTS to decrease inpatient fall risk in healthcare organizations.

3. Evaluate your organization’s training program for safe transfers and mobility.
Session Outline

1. Literature for inpatient fall risk reduction programs

2. Definition of the MTS; describe how teams link together to decrease fall risk

3. The role of physical therapy in the MTS

4. Relationship between assisted falls and patient injury

5. Discussion of training in safe transfers and mobility
LITERATURE FOR INPATIENT FALL RISK REDUCTION PROGRAMS
# Inpatient Falls: Quality and Safety Problem

## Prevalence (Oliver et al., 2010)
- 2% - 3% of hospitalized patients fall each year
- 30% - 51% of falls result in injury

## Benchmarks from National Database of Nursing Quality Indicators (Staggs et al., 2014)
- 3.4 falls/1000 pt. days
- 0.8 injurious falls/1000 pt. days

## Outcomes
- Cost...$14,000 greater for the 2% of fallers with serious injury (Wong et al., 2011)
- 1/11 Healthcare Acquired Conditions (HACs) PPS hospitals not reimbursed for
- Falls contribute to 40% of nursing home admissions (Tinetti et al., 1988)
- Fear of falling limits mobility (Tinetti et al., 1994)
Evidence indicates that teams decrease inpatient fall risk…but how?

<table>
<thead>
<tr>
<th>Randomized Controlled Trials</th>
<th>• Reliable use of bundled targeted interventions may be effective (Ang et al., 2011; Barker et al., 2016); single interventions not likely to be effective (Sahota et al., 2014; Shorr et al., 2012)</th>
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<tr>
<td>Cohort pre-post designs</td>
<td>• Fall risk has been reduced in studies where interprofessional team members were actively engaged in fall risk reduction efforts (Gowdy et al., 2003; von Renteln-Kruse et al., 2007)</td>
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<tr>
<td>Systematic review</td>
<td>• Etiology of falls is multifactorial (Oliver et al., 2004), thus falls require a multifactorial/interprofessional approach for prevention</td>
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<tr>
<td>Systematic review</td>
<td>• Themes specific to successful implementation of fall risk reduction programs include multidisciplinary implementation and changing attitudes of nihilism (Miake-Lye et al., 2013)</td>
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</table>
1. Care for higher proportion of older adults
2. Provide skilled rehabilitation
3. Limited QI resources
4. Lack valid fall rate benchmarks
5. Continue to receive payment for HACs
Fall Risk Reduction Context

• 2011 cross-sectional survey of all 83 community hospitals
  • No significant differences in prevalence of bedside interventions
  • CAHs reported performing significantly fewer organizational level evidence-based processes than non-CAHs
  • Risk of falls significantly greater in CAHs than non-CAHs
  • After adjusting for volume, hospitals in which teams integrated evidence from multiple disciplines and reflected/learned from data had significantly lower fall rates

• Conclusion: shift from nursing-centric to team-centric paradigm to decrease fall risk
Our Local Quality Problem

Association Between Hospital Type and Fall Rates

- **NE CAH 2010 (n=47)**
- **NE PPS 2010 (n=13)**
- **NDNQI 2011* (n=1,464)**

<table>
<thead>
<tr>
<th>Event Rate/1000 patient days</th>
<th>All Falls</th>
<th>Injurious Falls</th>
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<tbody>
<tr>
<td></td>
<td>5.9</td>
<td>1.7</td>
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<tr>
<td></td>
<td>4.0</td>
<td>0.9</td>
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<tr>
<td></td>
<td>3.4</td>
<td>0.82</td>
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</table>

*p = .01**

*p = .04**

*Staggs et al., Jt Comm Jrnl. 2014;40: 358-364*

**Negative binomial rate model**

(Jones et. al, 2015)
Problem: Lack of Accountability

- No One (n=13)
- Individual (n=13)
- Team (n=34)
- NDNQI*(n=1,464)

Event Rate/1000 patient days

- All Falls
  - No One: 6.7
  - Individual: 4.9
  - Team: 5.2
  - NDNQI*: 3.4

- Injurious Falls
  - No One: 2.6
  - Individual: 1.1
  - Team: 1.2
  - NDNQI*: 0.82

*p=.35**
*p=.02**

*Staggs et al., Jt Comm Jrnl. 2014;40: 358-364
**Negative binomial model

(Jones et. al, 2015)
Problem: Not Integrating Evidence

Does your fall risk reduction team integrate evidence from multiple disciplines to continually improve fall risk reduction efforts?

![Bar chart showing event rate per 1000 patient days for all falls and injurious falls.](chart)

- **All Falls**
  - Sometimes/rarely/never (n=32): 6.2, p=.046*
  - Always/Frequently (n=27): 4.6

- **Injurious Falls**
  - Sometimes/rarely/never (n=32): 1.9, p=.01*
  - Always/Frequently (n=27): 1.0

*Negative binomial model

(Jones et al., 2015)
Problem: Not Learning

Does your fall risk reduction team reflect by...

1. Collecting and analyzing data about fall risk reduction outcomes?
2. Modifying fall risk reduction policies and procedures based on outcome data?
3. Conducting root cause analyses of injurious falls?

*Negative binomial model (Jones et. al, 2015)
THE MULTITEAM SYSTEM (MTS)
What Defines a Team?

• Two or more people
• Complementary skills
• Interact dynamically toward a common and valued goal
• Includes patient and family

(Salas et al., 1992)
Teamwork as a Structure of Care...Donabedian’s Quality Assessment Framework

(Donabedian, 2003)

Structure
- How care is delivered, organized, financed
- People, equipment, policies/procedures
- Equivalent to system design, capacity for work

Process
- Tasks performed that are intended to produce an outcome
- Most closely related to outcomes
- Causal relationship between process & outcomes

Outcome
- “Ultimate Validator” Changes in individuals and populations due to health care
- Time to develop, multifactorial, random component
Structure: Fall Risk Reduction Multiteam System (MTS)

“Two or more component teams that interface directly and interdependently in response to environmental contingencies toward the accomplishment of collective goals.”

(Mathieu, Marks, & Zaccaro, 2001, p. 290)
Structure: Fall Risk Reduction MTS

Core Team — people who provide direct patient care

- Diagnose and treat using evidence-based care plan
- Conduct fall risk assessment
- Implement targeted risk reduction interventions that address risk factors
- Conduct medication review
- Evaluate mobility and function
- Report and learn from falls—participate in post-fall huddles
Structure: Fall Risk Reduction MTS

Coordinating Team — nurse, CNA, pharmacist, PT/OT, QI, senior leader

- Manage resources
- Coordinate fall risk reduction program and interventions
- Hold core team accountable for reliably implementing evidence-based interventions
- Span location, status/hierarchy, and knowledge boundaries across disciplines (Edmondson, 2012)
Boundaries—divisions between identity groups—exist between disciplines that make up the core team.

(Edmondson, 2012)
Structure: Fall Risk Reduction MTS

Contingency Team — members from various teams conduct post-fall huddle

• Meet immediately after a fall to determine what happened, why it happened, what will be done differently

• Goals:
  1. Decrease risk of future falls for an individual patient
  2. Apply what is learned to decrease risk across system
  3. Build trust and share knowledge

Post-Fall Huddle Tools

http://www.unmc.edu/patient-safety/capturefalls/tool-inventory.html
Structure: Fall Risk Reduction MTS

Ancillary and Support Services — provide direct task-specific patient care (e.g. radiology, laboratory, dietary) and create a clean, safe environment (e.g. laundry, env. services, maintenance, IT)

- Know their role in fall risk reduction
- Know who is at risk (signage)
- Know what to do if see/hear someone at risk getting up
- Know who to tell

Should housekeeping stock gait belts and be empowered to turn on a bed alarm for a patient at high risk?

Should a phlebotomist respond to a bed alarm?
Structure: Fall Risk Reduction MTS

Administration—

- Create/support culture of safety
- Communicate goal of decreasing fall risk
- **Awareness**—be aware of gaps between current practice and best evidence
- **Ability**—make sure staff have the knowledge, skills, and time to make improvement (resources)
- **Accountability**—hold the coordinating team accountable for the structure, process, and outcomes of fall risk reduction program
- **Action**—hold the coordinating team accountable for taking action...educating, auditing, motivating
  
  (National Quality Forum, 2010)
Effectiveness of Fall Risk Reduction Coordinating Teams

- Low (N=6, Mean=37)
- Moderate (N=5, Mean=43.6)
- High (N=5, Mean=51.6)

- Select fall risk assessment tools
- Integrate evidence from multiple disciplines
- Select interventions to reduce fall risk
- Link targeted interventions to risk factors
- Educate staff to use fall risk assessment tools
- Educate staff to report all falls
- Provide frontline staff with information about actions taken
- Create policies and procedures
- Conduct audits to monitor adherence
- Select/develop/revise Fall Reporting Form
- Educate staff about policies and procedures
- Educate staff to choose appropriate interventions
- Educate staff about outcomes of program
- Communicate program barriers and successes to leaders
- Communicate results of audits to staff
- Share program outcomes with hospital board members

(0 = Not Done, 1 = Not Effective to 4 = Highly Effective)
What Difference do Effective Coordinating Teams Make?

Association Between Effectiveness of Fall Risk Reduction Coordinating Teams and 2014 Total Fall Rates

Spearman
rho = -.51

Effectiveness Score - Fall Risk Reduction Team Activities
Sum of 16 Activities Scored 0 (Not Done) to 4 (Very Effective)
What Difference do Effective Coordinating Teams Make?

Association Between Effectiveness of Fall Risk Reduction Coordinating Teams and 2014 Unassisted Fall Rates

Spearman
rho = -.70

Effectiveness Score - Fall Risk Reduction Team Activities
Sum of 16 Activities Scored 0 (Not Done) to 4 (Very Effective)
THE ROLE OF PHYSICAL THERAPY IN THE MULTITEAM SYSTEM FOR INPATIENT FALL RISK REDUCTION
Common Fall Risk Factors

- History of Falls
- Muscle Weakness
- Gait Deficits
- Balance Deficits
- Use of Assistive Device
- Visual Deficit
- Arthritis
- Impaired ADL status
- Depression
- Cognitive Impairment
- Age > 80
- Polypharmacy

(American Geriatrics Society et al., 2001; Tinetti et al., 1986)
Role of Physical Therapy in Fall Risk Reduction MTS
PT Role on Core Team

• Assess and develop interventions to address strength, range of motion, posture, sensation, balance, transfers, gait, and need for an assistive device

• Prescribe and instruct in use of assistive devices
  • Patients who use assistive devices at greater risk for falls, but correct use of assistive devices may decrease fall risk (American Geriatrics Society et al., 2001; Grundstrom et al., 2012.; Allman et al., 2009)

• Educate patient and family re: safe mobility including transfers, gait, & environmental modifications
Prescribe exercise to mitigate strength and balance impairments

| Group and home-based exercise programs supervised by a PT reduce the risk of falling in community dwelling adults (Gillespie et al., 2012; Shubert, 2011) | Exercise included as part of a multifactorial intervention reduces the risk of falling in frail or institutionalized older adults (Shubert, 2011) | 50 hours of exercise achieved over 3-12 months is the minimal recommended dose of exercise to protect community dwelling older adults against falls (Sherrington et al., 2008) | Inconclusive results for exercise in care facilities and hospitals (Cameron et al., 2012) |
PT Role on Core Team

- Provide recommendations for discharge (d/c) from acute care
  - Appropriate d/c setting given current mobility status
    - Inpatient acute rehab
    - Skilled care
    - Home health
    - Home with out-patient PT
    - Home; no further services
  - Home modifications
    - Home safety visit
  - PT participation in d/c planning associated with decreased risk of readmission within 30 days (Smith, et al, 2010)
When should PTs be consulted for individual patients?

- Presence of impairments in transfers or gait during initial fall risk assessment (Sennour et al., 2009)
- Patient has a history of falls (AGS et al, 2001)
  - Admitted to hospital for a fall or fell while hospitalized
- Uncertainty regarding strategy/equipment for safe transfers, mobility, gait
PT Role on Core Team: Fall Risk Reduction Examples

• Automatic referral for PT screen for all patients identified at high fall risk
• Move beyond writing “1”, “2”, or “Hoyer” on the white board: post photos of transfer techniques for individual patients; directly communicate about functional/mobility impairments during rounds
• Create a culture of open communication b/t nursing and PT regarding consultation for best transfer strategies – even if pt. not formally referred for PT (no pass zone)
PT Role on Coordinating Team

Collaborate with others to:

• Develop forms/strategies to document mobility/transfer status

• Develop patient/family education materials

• Design environmental modifications to rooms and public areas

• Interpret fall event data

• Select screening tools with strong predictive validity
Collaborate with others to:

• Provide annual education and competency assessment for safe transfers and mobility

• Participate in audits of reliability of bedside interventions and provide feedback to staff
Impact of PT Participation on Coordinating Team … Boundary Spanning

Role on coordinating team enhanced their ability to span boundaries between nursing and PT members of core teams.

“…one of the things that we’ve tried really hard to do is to improve the communication with the nursing staff so that they understand that we have the skill set to help solve some of those problems that they run into when they have patients that are difficult to transfer….They rely on us a little more now to give them advice as to how to manage a patient better or what is safe for them and the patient.”
Impact of PT Participation on Coordinating Team ... Boundary Spanning

“...the hospital’s perception of us is that we’re not just somebody that goes in and does exercise and walks patients....our job is much more than that”

“...people know you as somebody in the hospital that helps to get policies in place.”

“Now that we’re a part of the [coordinating] team ... we are working with nurse supervisors and directors from across the hospital ... they can help communicate to their nurses the benefit of conversing with therapy, you know, on individual patients every day.”
PT Role on Contingency Team

Provide our unique and complementary perspective of a fall event and future prevention strategies during post-fall huddles.
PT Shares Complementary Knowledge and Skills Throughout the MTS

- Biomechanical Basis of Movement
- Impact of Pathophysiology on Movement
- Impact of Physical Impairments on Movement
- Psychometric Properties of Measurement
- PT Contribution to Decrease Fall Risk
RELATIONSHIP BETWEEN ASSISTED FALLS AND PATIENT INJURY
Results from CAPTURE Falls

Unassisted falls significantly more likely to result in injury

Association Between Assistance and Injury for 353 Adult Patient Falls Reported by 17 Small Rural Hospitals 8/12 - 7/14

- Moderate-Major Injury: 64.3%
- Minor Injury: 31.2%
- None: 4.6%

- Moderate-Major Injury: 80.0%
- Minor Injury: 17.8%
- None: 2.2%

$p = .021$, Pearson Chi-Square

Unassisted Falls (n=263) Assisted Falls (n=90)
Lesson Learned: Focus on Making it Easier to Assist Mobility

All other factors being equal, falling UNassisted is associated with…

**Patient Characteristics**

- Age ≥ 65 (Odds Ratio (OR) 2.55)
- Cognitive impairment (OR 3.70)

**System Characteristics**

- Being in the bathroom (OR 1.70)
- Gait belt NOT identified as an intervention (OR 6.97)
Lesson Learned: Assist with a Gait Belt to Control Center of Mass

All other factors being equal, falls resulting in injury are associated with…

**Patient Characteristics**

- Age $\geq$ 65 (OR 2.55)

**System Characteristics**

- Being in the bathroom (OR 2.48)
- NOT Doing this (OR 3.65)
Questions?
Group Discussion: Safe Transfers/Mobility Training
Key Components of Safe Transfers/Mobility Training

**When?**
- Annually
- New employee orientation

**Who?**
- Nursing and CNA staff (at a minimum)
- Consider other support staff (housekeeping, dietary, maintenance, clerical, etc.)

**How?**
- Include demonstration, hands-on practice, and return demonstration/competency assessment
Resources

• Toolkit freely available at:
  http://www.unmc.edu/patient-safety/capturefalls/
  • Learning modules on various IP fall-related topics
  • 16 mobility and transfer training videos
  • Fall event learning/benchmarking forms
  • Post-fall huddle form
  • Gap analysis form
  • And more!
Moving Beyond Direct Patient Care:
An Expanded Role for Physical Therapy in Inpatient Fall Risk Reduction

Thank You!

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