Collaboration and Proactive Teamwork Used to Reduce (CAPTURE) Falls

International Improvement Science and Research Symposium
April 21, 2015

Katherine J. Jones, PT, PhD
kjonesj@unmc.edu

UNMC

Conflicts of Interest

- Payment for Presentations and Advice…
  - No conflicts to report
- Research Funded by…
  - Agency for Healthcare Research and Quality
  - Nebraska Department of Health and Human Services
- Payment for travel to attend conferences
  - Agency for Healthcare Research and Quality
  - American College of Medical Quality
  - American Hospital Association
  - Nebraska Department of Health and Human Services
  - University of Nebraska Medical Center
  - University of Texas Health Science Center at San Antonio
- No other conflicts to disclose

Acknowledgement: Research Team

University of Nebraska Medical Center
- Katherine Jones, PT, PhD
- Dawn Venema, PT, PhD
- Jane Potter, MD
- Linda Sobeski, PharmD
- Robin High, MBA, MA
- Anne Skinner, RHIA
- Fran Higgins, MA, ADWR
- Mary Wood
- Kristen Topliff, BA, PT2

University of Nebraska at Omaha Center for Collaboration Science
- Roni Reiter-Palmon, PhD
- Victoria Kennel, MA
- Joseph Allen, PhD

Nebraska Medicine
- Regina Nailon, RN, PhD

Methodist Hospital
- Deborah Conley, MSN, APRN-CNS, GCNS-BC, FNGNA

3

Objectives

1. Explain the background, rationale, and context of Collaboration and Proactive Teamwork Used to Reduce (CAPTURE) Falls
2. Identify CAPTURE Falls as a complex social intervention (CSI)
3. Evaluate the outcomes of CAPTURE Falls based on extent of implementation and consistency with theory

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 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)

5

Evidence indicates that teams decrease fall risk…but how?

- **Systematic review:** Etiology of falls is multifactorial (Oliver et al., 2004), thus falls require a multifactorial/ interprofessional approach for prevention
- **Cohort pre-post designs:** 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)
- **Systematic review**: Themes specific to successful implementation of fall risk reduction programs include multidisciplinary implementation and changing attitudes of nihilism (Miake-Lye et al., 2013)
- **Theory:** Effective teams are the fundamental structure for managing complexity/learning and implementing change in organizations (Edmondson, 2012; Higgins et al., 2012)

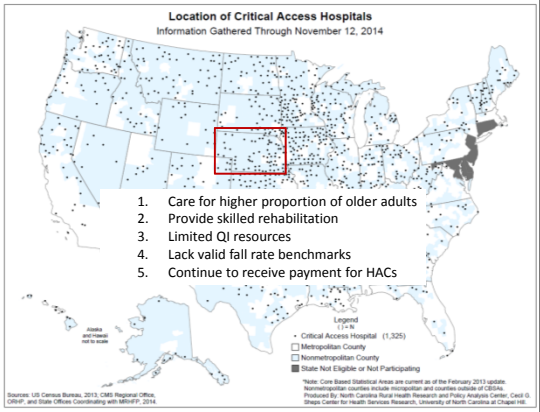
6

Teamwork as a Structure of Care…Donabedian's Quality Assessment Framework

(Donabedian, 2003)

Structure → Process → Outcome

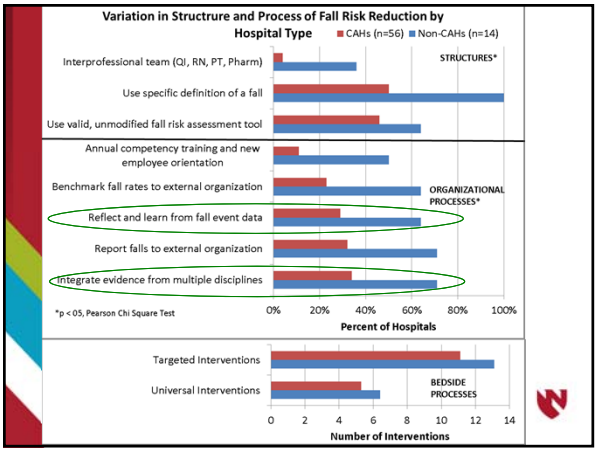
Structure	Process	Outcome
How care is delivered, organized, financed People, equipment, policies/procedures **Equivalent to system design, capacity for work**	Tasks performed that are intended to produce an outcome Most closely related to outcomes Causal relationship between process & outcomes	"Ultimate Validator" Changes in individuals and populations due to health care Time to develop, multifactorial, random component



http://www.flexmonitoring.org/wp-content/uploads/2013/06/CAH_111214.pdf

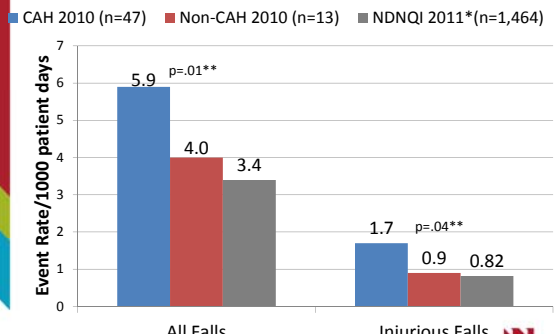
Fall Risk Reduction Context

- Quality indicator
  - Nursing quality dependent upon staffing?
  - Organizational quality dependent upon team structures and processes?
- Little known about HOW teams should implement fall risk reduction as an organizational goal
- Little known about risk of falls in smallest hospitals in US



Hospital Type Associated with Quality

(Jones et al., 2014)

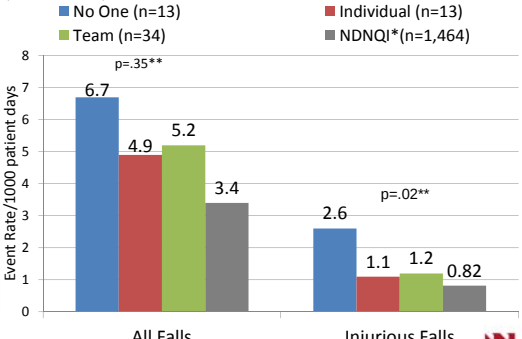


*Staggs et al., Jt Comm Jrnl. 2014;40: 358-364
**Negative binomial rate model

11

Evidence: Structure Determines Outcomes

(Jones et al., 2014)



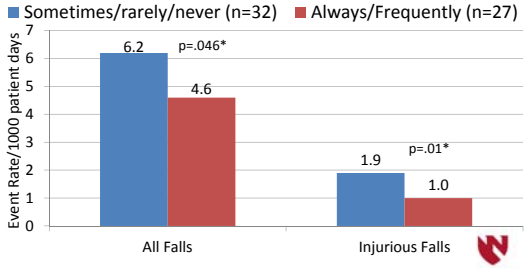
*Staggs et al., Jt Comm Jrnl. 2014;40: 358-364
**Negative binomial rate model

12

Evidence: Process Determines Outcomes

(Jones et al., 2014)

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



*Negative binomial rate model

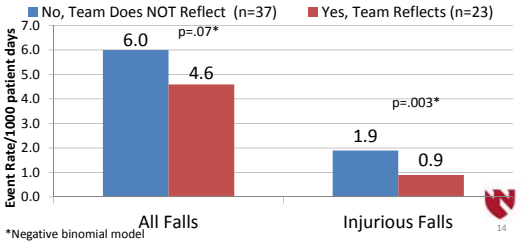
13

Evidence: Process Determines Outcomes

(Jones, et al., 2014)

Does your fall risk reduction team…

1. **Collect and analyze data regarding fall risk reduction program outcomes?**
2. **Modify fall risk reduction policies and procedures based on outcome data?**
3. **Conduct root cause analyses of injurious falls?**

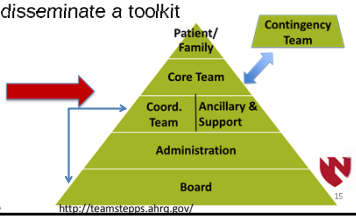


*Negative binomial model

14

Rationale: CAPTURE Falls

- **C**ollaboration **A**nd **P**roactive **T**eamwork **U**sed to **R**educe Falls http://www.unmc.edu/patient-safety/capturefalls/
- Partner with 17 Nebraska Hospitals
  - Implement Multiteam System
  - Support implementation of customized Action Plana
  - Evaluate implementation of Action Plans
  - *Develop and disseminate a toolkit*



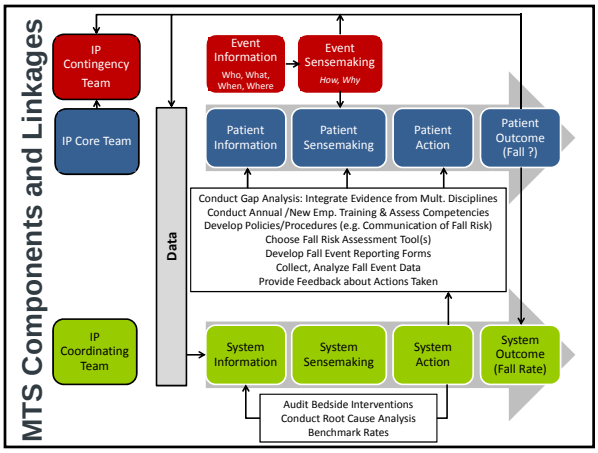
http://teamstepps.ahrq.gov/

15

MTS Definition and Typology

- "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)
  - Component teams achieve proximal goals
  - MTS achieves overarching/organizational goal
- Typology
  - Composition
  - Linkages
  - Development

(Zaccaro, Marks, & DeChurch, 2012)



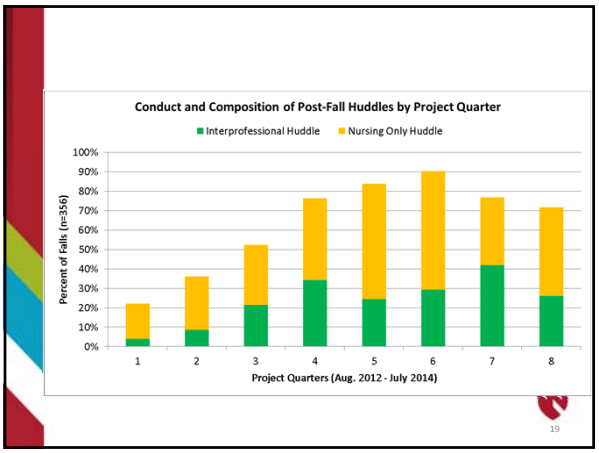
Goals of Post-Fall Huddle

http://www.unmc.edu/patient-safety/_documents/post-fall-huddle-form.pdf

- Proximal Contingency Team Goals
  1. Discover root cause of the fall through group sensemaking (critical thinking)
  2. Decrease the risk of a future fall for the patient who has fallen by changing the plan of care for that particular patient
- Overarching MTS Goals
  1. Decrease fall risk for all patients by applying what is learned in the huddle to the system
  2. Improve trust among bedside personnel (core team)
  3. Improve collaboration and coordination among component teams

https://www.youtube.com/watch?v=moB7FnqpP4I

18



Perceptions of Teamwork and Readiness to Change (TPQ-F)

Significant* Change Over Time 2013 vs. 2014 and due to Participation in Huddles

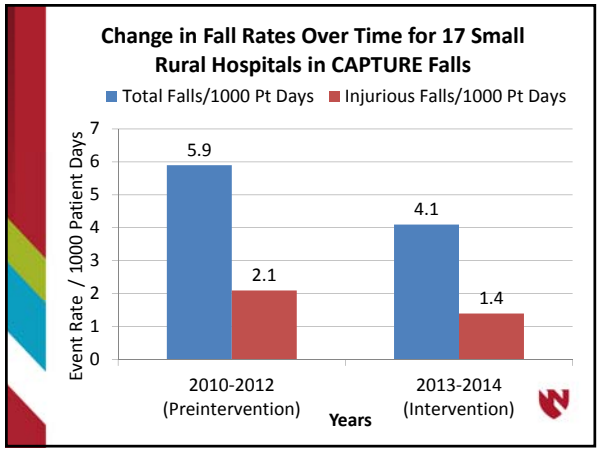
	Admin/Mgt		Coord. Team		Core Team		Ancillary Team		Support Services	
	Time	PFH	Time	PFH	Time	PFH	Time	PFH	Time	PFH
Team Structure			+			+		-		+
Leadership			+		-	+				+
Situation Monitoring		+	+					-		+
Mutual Support			+					-		+
Communication			+							+
Management Support			+			+		-	+	+
Hospital Staff Support		+	+							
Informal Opinion Leaders					-					
Hospital Resources			+							

*Random Effects ANOVA, adjusted for nesting by hospital; Time adjusted for participation in PFH

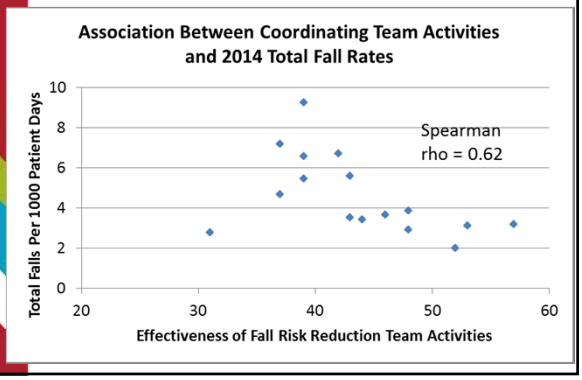
Evaluation of Complex Social Intervention (Ovretveit, 2014)

- Context
  - Culture assessment, focus groups, interviews
- Extent of implementation
  - Coord. Team Activities
    - Mean= 43.6
    - Range= 31-57/60
  - Coord. Team Education
    - Mean = 35.7
    - Range 18-60/60
- Outcomes explained by theory

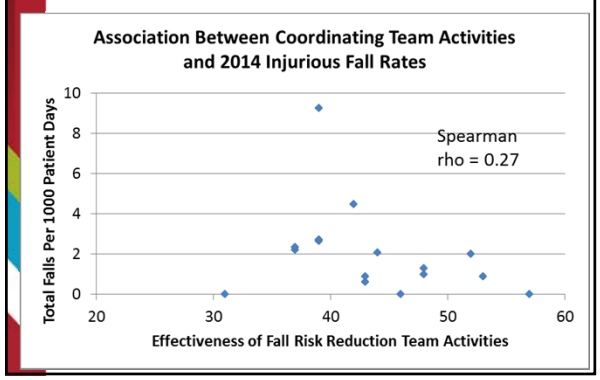
Structure → Process → Outcome



Extent of Implementation Determines Outcome



Extent of Implementation Determines Outcome



Outcome: Changing Attitudes

Nurse: "What did we learn about falls? I remember being a student nurse years ago, and one of my patients … had fallen at home. I kind of giggled—so she fell. And the nurse working with me said, 'Oh, no! In the elderly falls can be lethal, but that's just part of getting old.' And we've learned that's not just what happens– we can put things out there to prevent that."

Physical Therapist: "Teams hold you accountable and build you up."

Pharmacist: "I might look at something differently than a nurse or QI, so we can kind of talk about it together [in the huddle] and then identify why we think the fall happened and what we can do to improve."

Summary

- CAPTURE Falls is a complex social intervention developed to address higher fall risk in CAHs
- Based on extent of implementation of coordinating team activities, consistency with theory, and consideration of context…
- Use of MTS increased capacity of small rural hospitals to implement evidence-based fall risk reduction interventions by leveraging complementary skills and diverse thinking of multiple professions and teams

References

Donabedian A. An Introduction to Quality Assurance in Health Care. New York: Oxford University Press; 2003.

Edmondson AC. Teaming: How Organizations Learn, Innovate, and Compete in the Knowledge Economy. San Francisco: John Wiley & Sons; 2012.

Gowdy M, Godfrey S. Using tools to assess and prevent inpatient falls. Jt Comm J Qual Saf. 2003;29(7):363-368.

Higgins MC, Weiner J, Young L. Implementation teams: a new lever for organizational change. J Organiz Behav. 2012;33:366-388.

Jones KJ, Venema D, Nailon R, Skinner A, High R, Kennel V. Shifting the paradigm: An assessment of the quality of fall risk reduction in Nebraska hospitals. J of Rural Health. Published online Sept. 2, 2014; DOI: 10.1111/jrh.12088.

Mathieu JE, Marks MA, Zaccaro SJ. Multi-team systems in N. Anderson, D. Ones, HK Sinangil, & C. Viswesvaran (Eds.), International handbook of work and organizational psychology. London, UK: Sage Publications; 2001: 289-313.

Miake-Lye IM, Hempel S, Ganz DA, Shekelle PG. Inpatient fall prevention programs as a patient safety strategy: a systematic review. Ann Intern Med. 2013;158:390-396.

Oliver D, Daly F, Martin FC, McMurdo ME. Risk factors and risk assessment tools for falls in hospital in-patients: A systematic review. Age Ageing. 2004;33:122-130

Ovretveit J. Evaluating improvement and implementation for health. Berkshire, England: Open University Press; 2014.

Staggs VS, Mion LD, Shorr RI. Assisted and unassisted falls: different events, different outcomes, different implications for quality of hospital care. Jt Comm Jrnl. 2014;40: 358-364.

Tinetti ME, Speechley M, Ginter SF. Risk factors for falls among elderly persons living in the community. The New England Journal of Medicine. 1988;319:1701-1707.

References

Tinetti ME, Mendes de Leon CF, Doucette JT, Baker DI. Fear of falling and fall-related efficacy in relationship to functioning among community-living elders. J Gerontol. 1994;49:M140-M147.

(TPQ-F) Teamwork Perceptions Questionnaire-Fall Risk Reduction. Available at: http://www.unmc.edu/patient-safety/_documents/cf-teamwork-perceptions-survey-website.pdf . Accessed April 17, 2015.

von Renteln-Kruse W, Krause T. Incidence of in-hospital falls in geriatric patients before and after the introduction of an interdisciplinary team-based fall-prevention intervention. J Am Geriatr Soc. 2007;55(12):2068-2074.

Wong CA, Recktenwald AJ, Jones ML, et al. The cost of serious fall-related injuries at three Midwestern hospitals. Jt Comm J Qual Patient Saf. 2011;37:81-87.

Zaccaro SJ, Marks MA, & DeChurch LA. Multiteam systems: An introduction. In SJ Zaccaro, MA Marks, & LA DeChurch (Eds.), *Multiteam systems: An organization for dynamic and complex environments.* New York, NY: Taylor & Francis Group;2012:3-32.