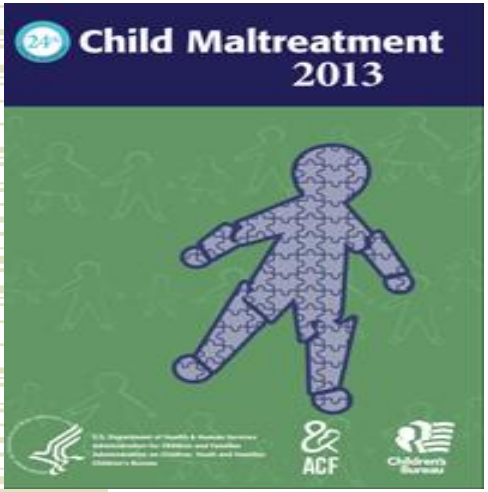
VANDERBILT UNIVERSITY
OWEN GRADUATE SCHOOL OF MANAGEMENT

Enable, Enact, Elaborate – A Guide for Reliability

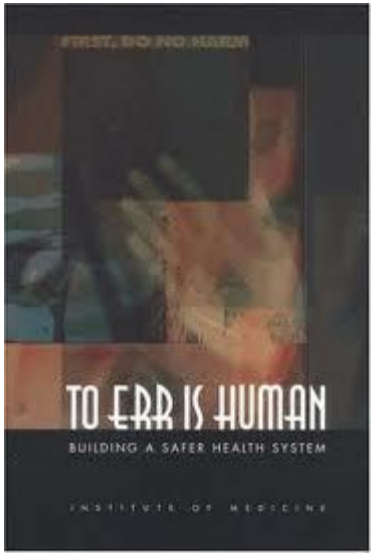
Tim Vogus
timothy.vogus@owen.vanderbilt.edu
February 1, 2018

Challenging Context



- 3.5million referrals for abuse and neglect, over 1,500 fatalities (Health & Human Services, 2015)
- Up to 50% experience placement disruption (Smith et al., 2001)
- Child welfare faces cuts (Zell, 2006), increased workloads (Tham & Meagher, 2009), and high media scrutiny (Chenot, 2011)

Low-Reliability Health Care



- Reliability a persistent and costly problem
  - 98,000 deaths annually (IOM, 2000)
  - May be significantly higher (James, 2014; Makary & Daniel, 2016)
- Improvement efforts have yielded benefits (AHRQ, 2015)
  - But have stagnated and remain below high reliability levels

Where Should Child Welfare Look?

High reliability organizations (HROs)

Schulman, 1993

Roberts, 1990; Weick & Roberts, 1993

LaPorte & Consolini, 1991

High Reliability Organizations

- Have nearly error-free operations in contexts that are extremely
  - Complex
  - Dynamic
  - Interdependent
  - Time-pressured

Health Care and Child Welfare Work

- Complex
  - Cognitively demanding (Aiken, et al., 2002)
- Dynamic
  - Highly uncertain (Argote, 1982)
  - Numerous exceptions (Tucker, 2004)
- Interdependent
  - Across shifts
  - Distributed expertise (Benner, et al., 1996)

Translating High-Reliability

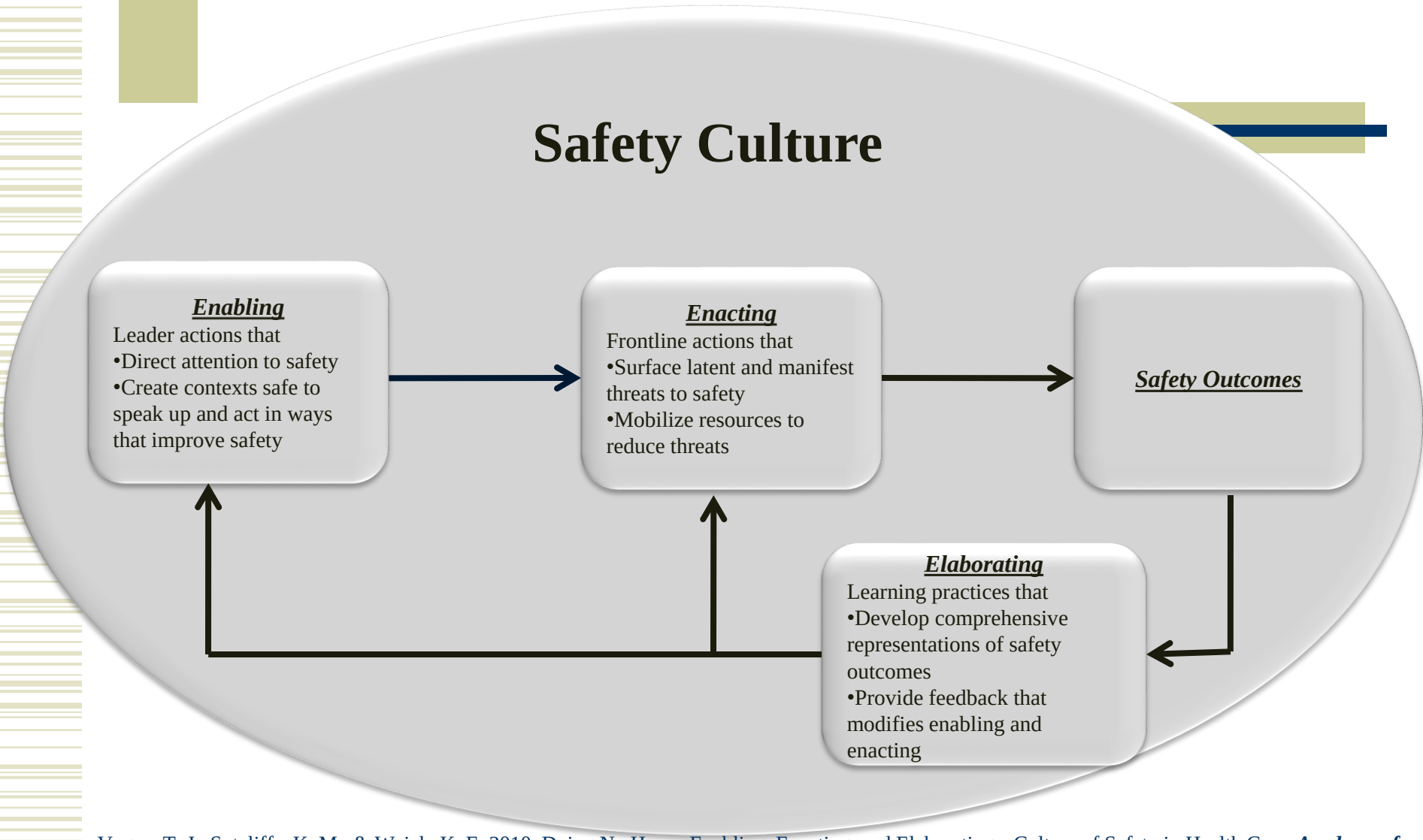
?

What Produces High-Reliability?

- Safety culture (Bierly & Spender, 1995; Roberts, et al., 1993; Schulman, 2004; Weick, 1987)

- A safety culture is the product of the shared values, attitudes, and patterns of behavior that determine the observable degree of effort with which all organizational members direct their attention and actions towards minimizing harm that may result from work processes

Safety Culture



Vogus, T. J., Sutcliffe, K. M., & Weick, K. E. 2010. Doing No Harm: Enabling, Enacting, and Elaborating a Culture of Safety in Health Care. ***Academy of Management Perspectives***, *24(4): 60-77.*

What Are Competencies of High-Reliability Leaders?

- Interpersonal behaviors
  - Prioritize safety
  - Build and refresh high-quality connections with the front line
  - Make it safe to take an interpersonal risk and speak up
  - Act as a resource
- Structuring work
  - Implement reliability-enhancing work practices
  - Cultivate the habits of high-reliability
  - Utilize compassion practices

Safety Climate – Giving Safety Priority

- Compared to other managers in my work setting, my manager pays greater attention to safety.
- My manager says a good word whenever a job is done according to safety rules.
- My clinical manager seriously considers employees' suggestions for improving safety.
- My manager approaches employees during work to discuss safety issues.
- Whenever pressure builds up, my manager wants us to work faster, rather than by the rules. (R)
- My clinical manager only keeps track of major safety problems and overlooks routine problems. (R)

Psychological Safety

- If you make a mistake in our workgroup, it is often held against you.
- The people in my workgroup value each others' unique skills and talents.
- Members of my workgroup are able to bring up problems and tough issues.
- It is safe to take an interpersonal risk in our workgroup.

How Is High-Reliability Enacted?

- Safety organizing - a social practice enacted collectively
  - Not an intra-psychic process (cf. Langer, 1989)
- Consists of
  - Preoccupation with failure
  - Reluctance to simplify interpretations
  - Sensitivity to operations
  - Commitment to resilience
  - Deference to expertise

- Safety organizing allows for the rapid detection and correction of errors and unexpected events

Safety Organizing Occurs When

- People are
  - Spending time identifying what could go wrong
  - Discussing alternatives as to how to go about everyday activities
  - Developing an understanding of who knows what
  - Talking about mistakes and ways to learn from them
  - Taking advantage of the unique skills of one's colleagues (even if the person is of lower status in the organization)

Measuring Safety Organizing

Concept	Survey Item(s)
Preoccupation with failure • Chronic wariness of the unexpected	When giving report to an oncoming nurse, we usually discuss what to look out for. We spend time identifying activities we do not want to go wrong.
Reluctance to simplify interpretations • Questioning assumptions and received wisdom	We discuss alternatives as to how to go about our normal work activities.
Sensitivity to operations • Up-to-date knowledge of where expertise resides	We have a good "map" of each other's talents and skills. We discuss our unique skills with each other so we know who on the unit has relevant specialized skills and knowledge.
Commitment to resilience • Deliberate learning from experience	We talk about mistakes and ways to learn from them. When errors happen, we discuss how we could have prevented them.
Deference to expertise • Migrating decision-making to person with most expertise, not most authority	When attempting to resolve a problem, we take advantage of the unique skills of our colleagues. When a patient crisis occurs, we rapidly pool our collective expertise to attempt to resolve it.

A Tale of Two Units

High Performing

- Coronary Care
- 47 beds
- Acuity – high
- 1: 4 RN to patient ratio
- "Inexperienced"
  Most less than 2 years
- High turnover

Low Performing

- Medical/Vascular Surgery
- 32 beds
- Acuity – high
- 1: 4 RN to patient ratio
- 48% less than 1 year
  40% greater than 5 years
- High turnover

High Performing Unit

- Creative practices
  - Innovative and ongoing training
    - "Continually in-servicing staff … especially on low use, high risk procedures and equipment"
  - Selective staffing with a focus on interpersonal
    - "We want the cream of the crop, but … leery of overconfidence … look for people calm in the setting"
  - Empowerment
    - Discretion over patient assignments
  - Learning orientation
    - "Let's learn from this … How would you do it differently?"

High Performing Unit

- Respectful interactions during hand offs
  - Deliberate and detailed reports
  - Active listening and creation of shared understanding
    - "How can you go from one day high risk to one day not?"
- Safety organizing
  - Everyone receives report on the whole floor
    - "Everyone is aware of who is likely to need help"
  - People acting with system awareness
    - "We're nosy … if I see something unusual in a room I have to stick my head in"
    - "Someone will always step up"

Low Performing Unit

- Managerial practice
  - Selective staffing with a focus on the interpersonal
    - "Whether they'll fit here … how they speak, how they carry themselves, and how they respond to the staff … do they like diversity"
  - Little else to take advantage of staffing
- Minimal interaction
  - Quick reports
  - Rely on cards, not stories or conversation
- Low levels of safety organizing
  - "Just tell me about my patients so I can do my job"

Is Safety Organizing Associated with Reliability?

- 95 nursing units, 10 hospitals
  - A one unit increase in safety organizing associated with 25% fewer medication errors
  - A one unit increase in safety organizing associated with 37% fewer patient falls
- 125 nursing units, 13 hospitals
  - Positively associated with managerial ratings of quality and safety

Vogus, T. J., & Sutcliffe, K. M. 2007. The safety organizing scale - Development and validation of a behavioral measure of safety culture in hospital nursing units. ***Medical Care***, 45(1): 46-54.

Do Other Safety-Oriented Practices Enhance These Effects?

- Safety organizing doesn't occur in a vacuum
  - Potentially enhanced by complementary practices
- Care pathways
  - Standardization of care according to best practice
    - Structure interactions
    - Build connections (Feldman and Rafaeli, 2002)
    - Facilitate coordination (Gittell, 2002)
  - "The majority of our patients are on care pathways" (Gittell, 2002)

Is Safety Organizing Enhanced By Complementary Practices?

Vogus, T. J., & Sutcliffe, K. M. 2007. The impact of safety organizing, trusted leadership, and care pathways on reported medication errors in hospital nursing units. ***Medical Care***, 45(10): 997-1002.

What Are the Consequences for Employees?

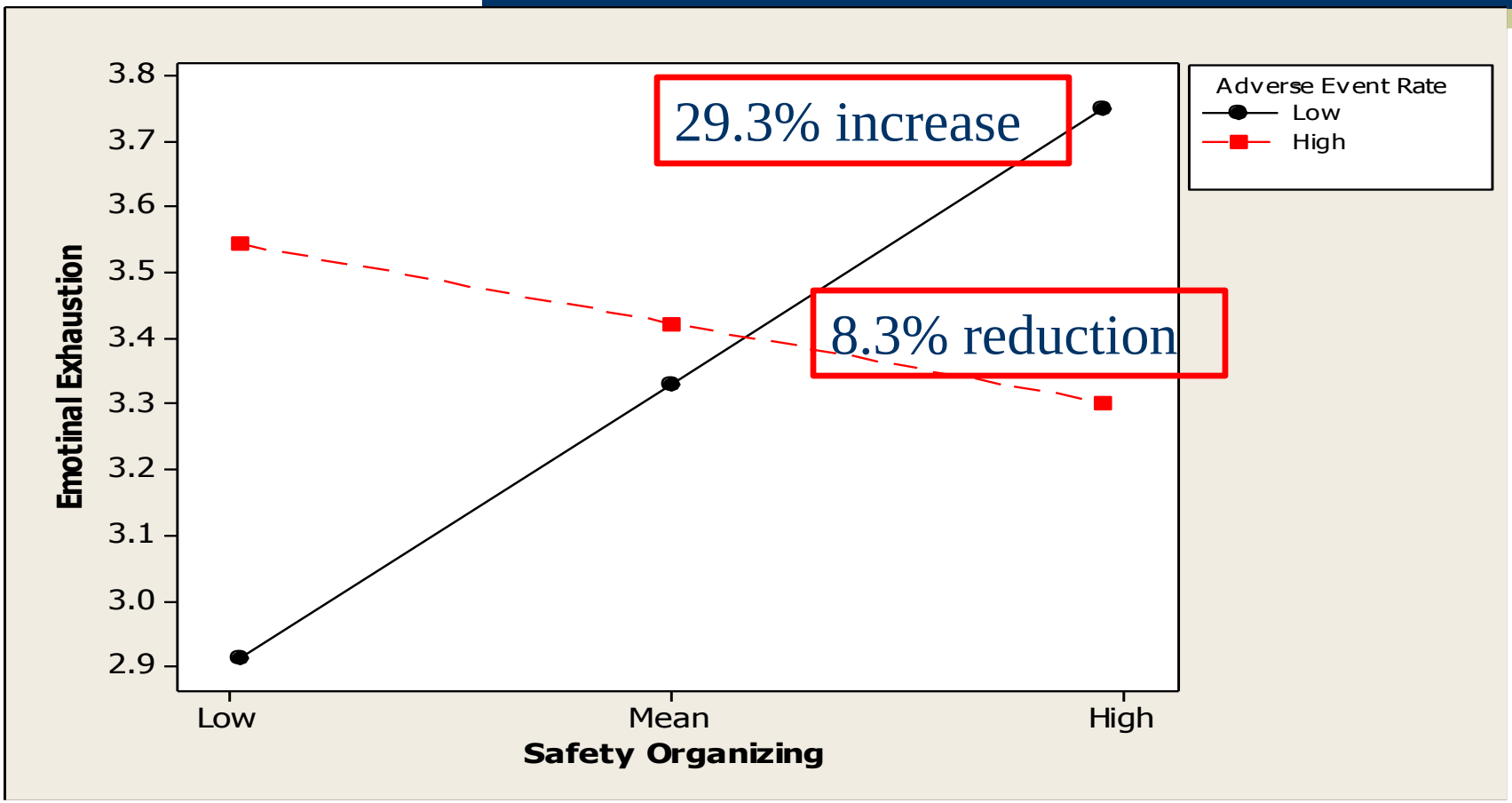
Emotional Exhaustion

- Conservation of resources (Hobfoll, 2001)
  - Employees are motivated to act in ways that eliminate threats to resources
- Safety organizing consumes discretionary resources (Levinthal & Rerup, 2006; Schulman, 1993)
- Safety organizing acts as a resource (Weick & Sutcliffe, 2007)

Emotional Exhaustion

- Safety organizing's effect on emotional exhaustion depends on context
  - High levels of adverse events
    - Make safety organizing necessary (Weick & Sutcliffe, 2003)
    - Help "second victims" cope with error prone environments (Dekker, 2013)
  - Low levels of adverse events
    - Dynamic non-events (Weick, 1987)
    - Minimizes felt impact of safety organizing (Grant, 2013)

Safety Organizing and Emotional Exhaustion



Vogus, T. J., Cooil, B., Sitterding, M., & Everett, L. Q. 2014. Safety Organizing, Emotional Exhaustion, and Turnover in Hospital Nursing Units. ***Medical Care,*** 52(10): 870-876.

Turnover

- Over time safety organizing reduces disruptive events that cause turnover (Brewer, et al. 2012; Morrell, 2005)

- Safety organizing consistent with professional ideals of nursing (e.g., Benner, 1984)

Findings - Turnover

- One standard deviation increase in safety organizing associated with 13.6% decrease in turnover
- Average hospital in the sample would save between $169,000 and $1,014,560

Vogus, T. J., Cooil, B., Sitterding, M., & Everett, L. Q. 2014. Safety Organizing, Emotional Exhaustion, and Turnover in Hospital Nursing Units. ***Medical Care,*** 52(10): 870-876.

Which Practices Enable High-Reliability?

HROs Suggest Work Practices Are Prominent

- Developmental coaching and empowerment (PICU, Madsen et al. 2006)

- Frontline empowerment (trauma teams, Klein et al. 2006)

- Careful selection, selection for interpersonal skill (incident command system, Bigley & Roberts, 2001)

- Continuous and informal training (aircraft carriers, LaPorte & Consolini, 1991; Weick & Roberts, 1993)

Reliability-Enhancing Work Practices

- Selection for interpersonal skill
  - RNs are hired based on their willingness to learn new skills, their ability to work with others, and ability to communicate
- Extensive training
  - Preceptor programs, training in interpersonal skills, ongoing informal discussion and training
- Employee involvement
  - Discretion over work practice, ability to suggest improvements, participate in work/care delivery decisions

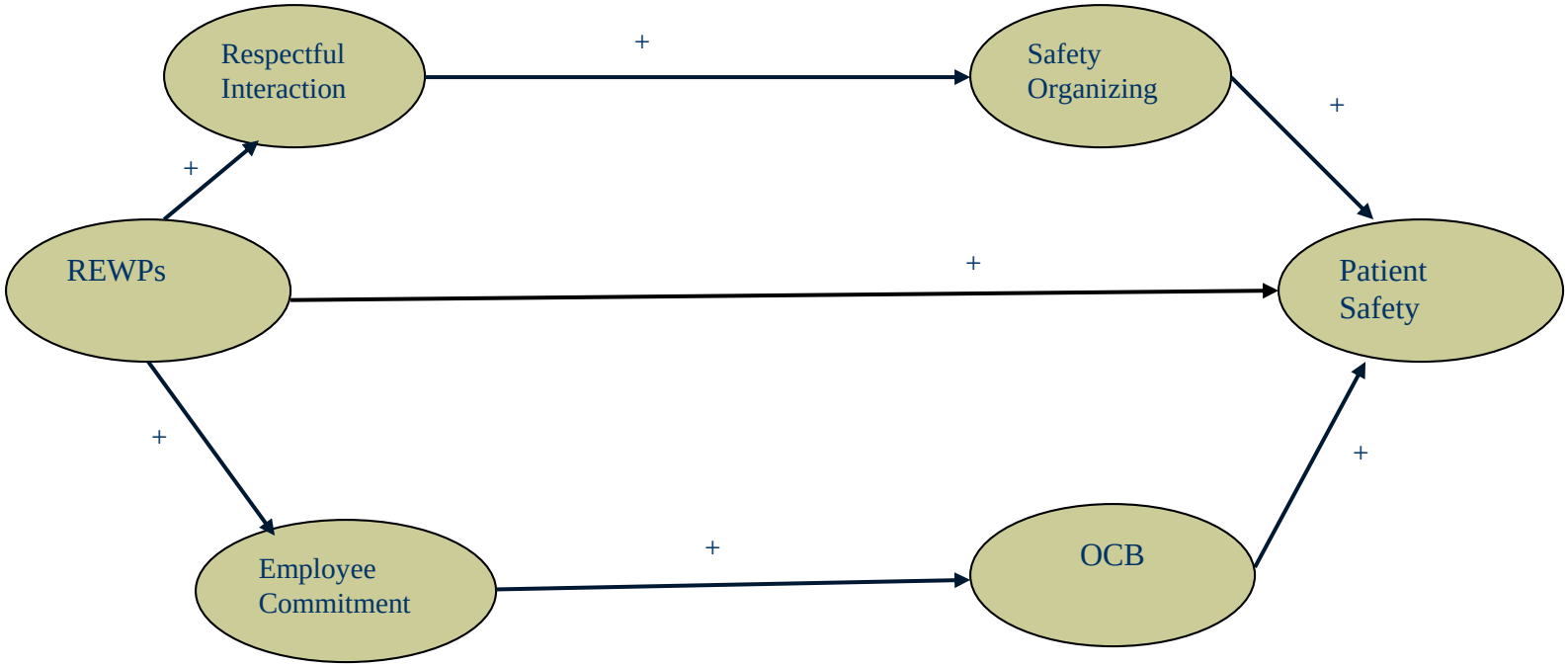
How Do REWPs Practices Help?

- Through signaling
  - Signaling the behaviors expected, supported, and rewarded
- Signaling about what?
  - How work is to be carried out
    - Hiring and training for interpersonal skills signals they are valued and an important part of everyday work
    - Empowering the frontline signals that input is expected and valued
  - They foster a psychological contract
    - Employees are valued and treated fairly, so they reciprocate and generalize

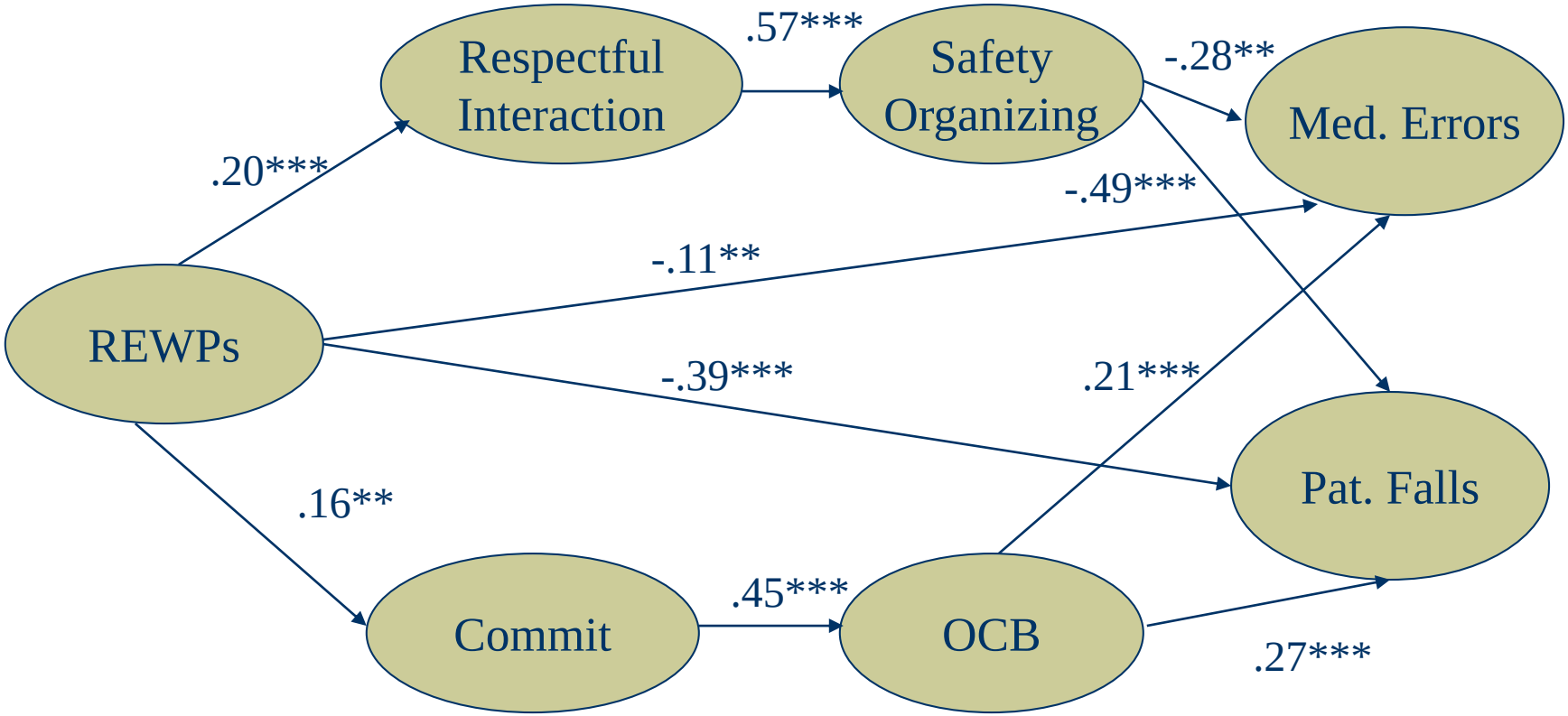
What Enables Safety Organizing?

Dyadic interactions – trust, honesty, and self-respect

Capabilities for detecting and correcting the unexpected



Findings



Vogus, T. J., & Iacobucci, D. In Press. Creating Highly Reliable Health Care: Reliability-Enhancing Work Practices Affect Patient Safety in Hospitals. ***Industrial and Labor Relations Review.***

Effects of REWPs

- On medication errors
  - A one unit increase in REWPs associated with 10% fewer medication errors
- On patient falls
  - A one unit increase in REWPs associated with 33% fewer patient falls

Vogus, T. J., & Iacobucci, D. In Press. Creating Highly Reliable Health Care: Reliability-Enhancing Work Practices Affect Patient Safety in Hospitals. ***Industrial and Labor Relations Review.***

How Can High-Reliability be Elaborated and Sustained?

Build Habits

- Difficult to dislodge poor habits
  - Self-justifying rationales (e.g., Bristol Royal Infirmary, Mid Staffordshire, St. Mary's in Miami)
- Reliability is fragile
  - Loma Linda Pediatric Intensive Care Unit
- Consistent reliability relies on well-developed habits
  - Virginia Mason, Johns Hopkins CUSP

VANDERBILT UNIVERSITY
OWEN GRADUATE SCHOOL OF MANAGEMENT

How Organizational Instill High-Reliability Habits

Component of Habit	Organizational Examples
Tendencies toward modes of action and thought	**All caregiver perspectives are valid and useful**. Elicit frontline caregiver concerns and recommendations for peers and administrators.[4,30-33] **Taking the patient perspective** in all work activities.[29] **Standardize as much as possible** to preserve attention for noticing and fixing discrepancies.[30,31] **Reliability falters when thought and action are passive[32,33] or self-protective (we're still a center of excellence) and comfort-centered (we have tough cases; still coming up the learning curve).[26-28]**
Acquired and shaped by prior action	Extensive and **ongoing training regarding collaboration** (e.g., shared language), **problem-sensing**, and **using improvement tools**.[4,29-33,54] **Socializing newcomers** and otherwise sharing organizational history of challenges and how they were overcome.[54,56]
Automatic	Use of **standards and routines** to trigger specific modes of thought and action.[4,30,31] Reliability falters when problems are surfaced and immediately scuttled.[26-28] Results in the cessation of speaking up.[32,33]
Fitted to environment	Change thoughts and actions cued in the environment through greater **leader presence and leader style and behavior, onsite immersions in joint problem-solving, and publicizing** how frontline suggestions are turned into new practices and standards.[29-33] Low reliability also cued by a hostile and unsupportive context that undermines efficacy and rewards silence.[26-28,57]
Socially shared	**Shared tools of Lean and other forms of process improvement** (e.g., DMAIC) throughout the organization.[29-31] Collaborative practice (e.g., rounding, formal empowerment, and inclusive post-event debriefs).[32,33] Diverse improvement teams that cut across the organization. Formal ways of disseminating better practice (e.g., Armstrong Institute)[30,31]

Vogus, T. J., & Hilligoss, B. 2016. The underappreciated role of habit in highly reliable healthcare. ***BMJ Quality & Safety***, 25(3): 141-146.

Everyday Habits of High-Reliability

Safety Organizing	Definition	Questions to Ask in Daily Practice
Preoccupation with failure	Practicing with a chronic, proactive wariness of the unexpected	What are we worried about? Where are we most vulnerable?
Reluctance to simplify interpretations	Taking deliberate steps to question assumptions and create a more complete and nuanced picture of operations	What assumptions are we making? Are there others we could make? What are alternative ways to carry out our work?
Sensitivity to operations	Ongoing interaction about expertise and current operations	Who will be most affected by our work? Where does necessary experience reside?
Commitment to resilience	Developing and refining capabilities to quickly detect, contain, and learn from errors and unexpected events	Do we need to huddle and discuss what went well? How can we replicate it? What went wrong? How can we avoid the same mistake?
Deference to Expertise	Ensuring that decision-making authority migrates to the person or people with the most expertise when needed.	Who has knowledge we need to consider? What barriers prevent us from drawing upon the appropriate expertise?

Vogus, T. J., & Hilligoss, B. 2016. The underappreciated role of habit in highly reliable healthcare. ***BMJ Quality & Safety***, 25(3): 141-146.

Attend to Emotions

- Safety organizing requires high levels of discretionary effort and attentiveness (Levinthal & Rerup, 2006)
- Frontline employees consistently engaging in effort that is "beyond the levels attained at psychological and cultural equilibria for human beings" (Schulman, 1993, p. 368)
- **How and why do individuals sustain this extraordinary effort?**

Compassionately Support Caregivers

Workplace suffering is costly

- Lower productivity (Frost, 2003)
- Burnout & compassion fatigue (Abendroth, et al. 2006; Figley, 1995; Maslach, 1982)
- Workplace violence (Pearson & Porath, 2005)

Regularly provide support for staff/caregivers

- Forums (e.g. meetings, interventions, training)
- Support Outlets (e.g. pastoral care)

Recognize and Reward Compassion

Makes caregivers more likely to

- **Treat whole person**

(e.g. Brody, 1992; Cassel, 2002)

- **Notice and respond to "weak signals"**

(Benner et al. 1996; Lilius et al. 2011)

- **Think empathically and attempt to customize care** (Kahn, 2005; Lilius et al. 2011)

Compassionate Care -> Better Care Experience
(Innis et al. 2004; Wolosin et al. 2012)

Compassion Practices

- **Compassion Practices Scale**
  - All items were rated on a 7 point Likert-type scale. For items 1-4 listed below, the anchors ranged from (1) No Extent to (7) Great Extent. For item 5, which assessed frequency, the anchors ranged from (1) Never to (7) Always.

1. To what extent does the hospital use recognition programs to reward employees for acts of caring shown to patients/families?
2. To what extent does the hospital use recognition programs to reward employees for helping one another?
3. To what extent does the hospital have compassionate caregiver/employee award programs? (e.g., DAISY Award, awards for Clinical Staff, awards for Support Staff)?
4. To what extent does the hospital offer regular programs that provide pastoral care for employees?
5. How often does your hospital facilitate support sessions for departments/units dealing with things like crisis events, conflict, trauma, or workplace stress?

.13*

.14*

HCAHPS
- **Rating**
- **Recommend**

Induce Prosocial Motivation

- The desire to expend effort on others (Grant, 2008)

- Safety organizing is prosocial action
  - Acting in ways that subordinate personal interests to the system (Weick & Roberts, 1993)
  - Increases awareness of others, where expertise resides and how it might be mobilized to resolve the unexpected

Induce Prosocial Motivation

- Creates and sustains safety organizing by
  - Increasing commitment to beneficiaries
  - Expanding processing of information about others (Grant, 2008)
  - Consider others' perspectives and synthesize information to better help them (Grant & Berry, 2011)
  - Generating solutions that incorporate others' interests and solve problems

Foster Emotional Ambivalence

- The simultaneous experience of contradictory feelings (e.g., happy and sad, Fong, 2006)
  - Balances confidence and caution
- Flexible to recognize weak signals (Fong, 2006) and consider multiple perspectives to aid intervening correctly (Rees, et al. 2013)

Hope and Doubt

- Doubt – the experience of not knowing
  - Sense of unease that fuels need to reconsider and revise our understanding (Locke, et al. 2008)
  - Accounts to ensure people don't feel like they have things under control (Weick & Roberts, 1993)
- Hope – appraisal of environment and belief in one's ability to navigate it (Lazarus, 1999)
  - Confidence to entertain and pursue new ideas (Golden-Biddle & Correia, 2012)
- Need both simultaneously in equal measure

Conclusions

- Safety culture as a process of enabling, enacting, and elaborating
- Positive effects of safety organizing on
  - Medication errors and patient falls
  - Turnover
  - Emotional exhaustion (on error-prone units)
- Negative effect of safety organizing when it's not perceived as necessary
- Safety organizing enabled by REWPs
- Safety organizing and reliability sustained by affect and habit

A well-designed organization is not a stable solution to achieve, but a developmental process to keep active.

(Starbuck & Nystrom, 1981, p. 14)

That means:

You **NEVER** get
high-reliability organizing
behind you!

High Reliability and Safety Organizing Resources

- Roberts, K. H. and R. G. Bea (2001). "When Systems Fail." Organizational Dynamics 29(3): 179-191.
- Rosenthal, M. M., and K. M. Sutcliffe (2002). Medical Error: What Do We Know? What Do We Do? San Francisco, CA, Jossey-Bass.
- Sutcliffe, K. M., E. Lewton, et al. (2004). "Communication Failures: An Insidious Contributor to Medical Mishaps." Academic Medicine 79(2): 186-194.
- Vogus, T. J. and K. M. Sutcliffe (2007). "The Safety Organizing Scale: Development and Validation of a Behavioral Measure of Safety Culture in Hospital Nursing Units." Medical Care 45(1): 46-54.
- Weick, K. E. (1987). "Organizational Culture as a Source of High-Reliability." California Management Review 29: 112-127.
- Weick, K. E. and K. M. Sutcliffe (2003). "Hospitals as Cultures of Entrapment: A Reanalysis of the Bristol Royal Infirmary." California Management Review 45(2): 73-84.
- Weick, K. E. and K. M. Sutcliffe (2007). Managing the Unexpected: Resilient Performance in and Age of Uncertainty, Second Edition. San Francisco, CA, Jossey-Bass.

Shameless Self-Promotion

- Vogus, T.J., & Singer, S.J. (2016). "Creating Highly Reliable Accountable Care Organzations." Medical Care Research & Review, 73(6): 660-672.
- Vogus, T. J., & Iacobucci, D. (2016). "Creating Highly Reliable Health Care: How Reliability Enhancing Work Practices Affect Patient Safety in Hospitals." ILR Review, 69(4): 911-938.
- Vogus, T.J., & Hilligoss, B. (2016). "The Underappreciated Role of Habit in Highly Reliable Health Care." BMJ Quality & Safety, 25(3): 141-146.
- Vogus, T. J., Cooil, B., Sitterding, M., & Everett, L. 2014. "Safety Organizing, Emotional Exhaustion, and Turnover in Hospital Nursing Units." Medical Care, 52(10): 870-876.
- Vogus, T. J., Rothman, N. B., Sutcliffe, K. M., & Weick, K. E. 2014. "The Affective Foundations of High Reliability Organizing." Journal of Organizational Behavior, 35(4): 592-596.
- Singer, S.J., & Vogus, T.J. (2013). "Safety Climate Research: Reflections and New Directions." BMJ Quality and Safety, 22(1): 1-4.
- Singer, S.J., & Vogus, T.J. (2013). "Reducing Hospital Errors: Interventions that Build Safety Culture." Annual Review of Public Health, 34: 373-396.
- Vogus, T.J., & Sutcliffe, K.M. (2012). "Organizational Mindfulness and Mindful Organizing: A Reconciliation and Path Forward." Academy of Management Learning & Education, 11(4): 722-735.
- Vogus, T.J., Sutcliffe, K.M., & Weick, K.E. (2010). "Doing No Harm: Enabling, Enacting, and Embedding a Culture of Safety in Health Care Delivery." Academy of Management Perspectives, 24(4): 60-77.
- Vogus, T.J., & Sutcliffe, K.M. (2007b). "The Impact of Safety Organizing, Trusted Leadership, and Care Pathways on Reported Medication Errors in Hospital Nursing Units." Medical Care, 45: 997-1002.

Preoccupation with Failure

- A wariness about what could go wrong
- Questions to ask
  - What are we most worried about?
  - Where are we most vulnerable?
  - What is the “worst case scenario”?

Reluctance to Simplify Interpretations

- Questioning assumptions to develop better ways of working

- Questions to ask
  - What assumptions are we making?
  - Are there data that disconfirm our assumptions?
  - What other assumptions could we make?
  - What are alternative ways to carry out our work?

Sensitivity to Operations

- A shared understanding of current status and where necessary expertise resides

- Questions to Ask
  - Who will be most impacted by our work?
  - Where does the necessary expertise reside?
  - Who needs to be at the table?

Commitment to Resilience

- Regularly reflecting on and learning from outcomes to build group capabilities

- How do we know we need to stop and huddle or debrief?
- What went well? How can we replicate it?
- What went wrong? How can we avoid the same mistakes?

Deference to Expertise

- Decision-making based on problem-specific expertise, not formal authority

- Questions to ask
  - Who has the most experience with this situation?
  - Who has knowledge we need to consider?
  - How will we get their perspective?
  - What barriers will prevent us from drawing upon the appropriate expertise?