Developing Strong Action Plans to Improve Patient Safety

Using the Concepts of Just Culture,

Human Factors and System Thinking

NHA Preconference Workshop, November 8, 2023

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Welcome!

NAHQRS

Nebraska Association for Healthcare
Quality, Risk and Safety

Jan Rains, RN, CPHQ
President
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Presenters

- Emily Barr OTD, MBA, OTR/L, BCG; Executive Director; Nebraska Coalition for Patient Safety

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Conflict of Interest Statement

Emily Barr, Carla Snyder and Gail Brondum
have no actual or potential conflicts of interest.

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Objectives

1. Describe human factors and systems in healthcare environments and explain their impact on the delivery of safe patient care.
2. Define Just Culture and describe its role in improving patient safety.
3. Discuss the five rules of causation.
4. Describe the Hierarchy of Interventions for the reduction of risk and illustrate how it can be used to develop strong action plans.
5. Apply concepts utilizing example healthcare event scenarios.
6. Identify resources to support patient safety improvement efforts.

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Acknowledgment

Much of the content in this presentation is based on the Just Culture Certification and Train the Trainer curriculums developed by Outcome Engenuity, LLC (which is now the Just Culture Company).

David Marx, JD is the founder and CEO of the Just Culture Company and is considered a Just Culture pioneer. The focus of the Just Culture Company is to help high-risk organizations develop safety-supportive cultures through the integration of systems engineering, human factors, and the law.

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Introductions

Please briefly introduce yourself by telling us:

- Your name
- Organization
- Role within the organization
- One thing you would like to take away from today's workshop – is there a problem you are trying to solve at your organization?

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A Safety Moment: Annie's Story

Positive system approach to an adverse event

https://www.youtube.com/watch?v=zeldVu-3DpM&feature=youtu.be

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What does workplace justice look like today?

Why do we struggle with it?

What do you think?

What is your experience?

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Scenario #1

An experienced surgeon sees a new piece of equipment at a conference. Back at the hospital, a sales representative persuades her to use the equipment for a procedure. She has never used the equipment before and accidentally punctures the patient's bowel. The surgeon repairs the bowel and the patient recovers fully. The OR has a policy that says new equipment will be officially approved and training will be conducted prior to its use.
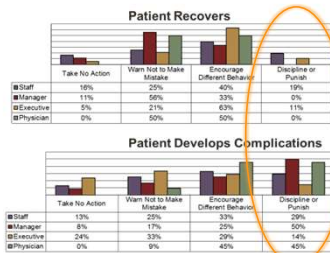
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Scenario #2

An experienced surgeon sees a new piece of equipment at a conference. Back at the hospital, a sales representative persuades her to use the equipment for a procedure. She has never used the equipment before and accidentally punctures the patient's bowel. The surgeon repairs the bowel **but the patient develops life-threatening complications due to an infection caused by the accidental puncture.** The OR has a policy that says new equipment will be officially approved and training will be conducted prior to its use.

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Survey Results

Patient Recovers

	Take No Action	Warn Not to Make Mistake	Encourage Different Behavior	Discipline or Punish
Staff	16%	25%	40%	19%
Manager	11%	56%	33%	0%
Executive	5%	21%	63%	11%
Physician	0%	50%	50%	0%

Patient Develops Complications

	Take No Action	Warn Not to Make Mistake	Encourage Different Behavior	Discipline or Punish
Staff	13%	25%	33%	29%
Manager	8%	17%	25%	50%
Executive	24%	33%	29%	14%
Physician	0%	9%	45%	45%

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Outcome/Severity Bias

When leadership allows the severity of the outcome/ level of harm to drive its response to an event
- Around employees' choices
- Around the system design

What are the effects?
- We may punish when someone doesn't deserve it
- We let risky behaviors continue
- We may overreact to singular events and underreact to risk in the system

"No Harm, No Foul"

Outcome Engenuity, 2018

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Was outcome/severity bias at play in Annie's story?

What do you think?

What were the results?

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accountability

fairness   **justice**

Leadership

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Just culture: A system of shared accountability

Organization
- Designing safe systems
- Responding to employee behaviors in a fair and just manner
- Creating an open learning environment

Employees
- Making safe choices
- Reporting errors and hazards
- Participating in the learning culture

System Design / Human Behavior

A *reality-based* system of justice...our complex systems include and interact with fallible human beings.

Outcome Engenuity, 2018

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Shifts the focus

From:
- Severity of events and outcomes
- Blaming the individual

To:
- Quality of choices and management of risk in the system
- Designing safer systems

Outcome Engenuity, 2012

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The role of just culture in a culture of patient safety

Informed – safe, highly reliable organization

Flexible – the organization changes processes and systems to improve; team communications are optimized; there is psychological safety to speak up about safety related information

Learning – information from reports is used to understand risk in the organization and how systems and processes can be improved

Reporting – staff feel safe to report errors and unsafe situations; they understand how the information is used

Just –there is a fair, transparent, consistent system of managing events, demonstrating a shared accountability between system design and behavioral choices

Learning → Flexible → HRO → Just → Reporting

Reason, 1997; Joint Commission, 2017

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Just culture

Culture of patient safety

High reliability organization

Shape values and expectations

Design safer systems

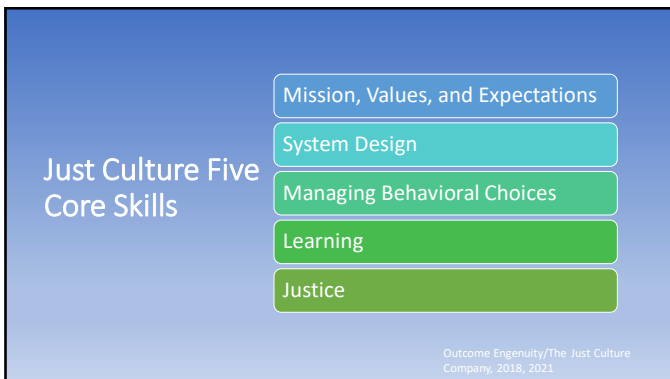**Hold employees accountable**
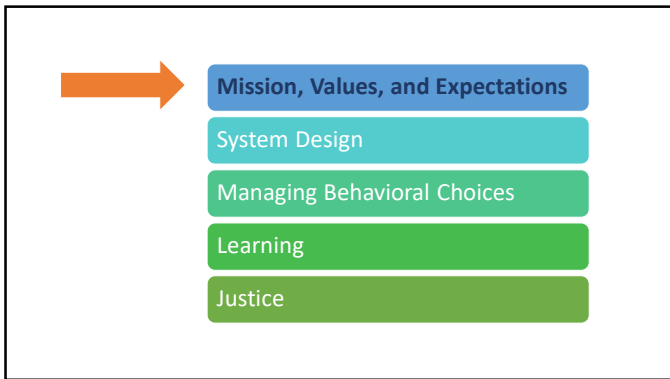
Work In Progress

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The proposition is this:

framed by the right systems of learning, the right systems of justice, we can design systems and help humans make choices in those systems to produce better outcomes at the individual, local, and societal level.

~ David Marx, Founder of Outcome Engenuity and The Just Culture Company

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Just Culture Five Core Skills

Mission, Values, and Expectations

System Design

Managing Behavioral Choices

Learning

Justice

Outcome Engenuity/The Just Culture Company, 2018, 2021

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Mission, Values, and Expectations

System Design

Managing Behavioral Choices

Learning

Justice

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Life, liberty, and the pursuit of happiness

- As humans, the pursuit of happiness is our basic mission
- We are very mission oriented as human beings
- Our mission is our reason for acting
- We protect our values as we seek our mission
- Values help us know how to behave as we work toward our mission

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Mission

- Provide exceptional healthcare services
- Improving the health of our communities
- To lead and innovate in healthcare delivery and community wellness

Values

- Respect
- Dignity
- Quality
- Patient-centered
- Integrity
- Trust
- Teamwork
- Inclusion

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Conflicting values

A hospital permits up to three late arrivals per quarter before a counseling is initiated. A nurse has been late twice within one quarter. Coming in to work one morning, she notices an elderly man stranded on the side of the road struggling with a flat tire. She stops to help him, which results in her arriving at work 15 minutes late.
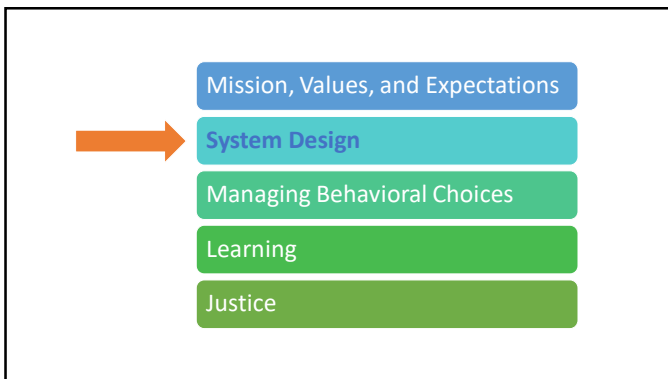
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Questions?
Concerns?
Ideas?

✓ Missions and values exist on many levels – societal, organizational, personal.

✓ The world is a messy place and values will compete with one another.

✓ Just Culture will help you move through the messiness to make logical decisions about workplace accountability and justice.

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- Mission, Values, and Expectations
- System Design
- Managing Behavioral Choices
- Learning
- Justice

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11/6/2023

Human Fallibility

Humans are not perfect and are likely to make mistakes or fail in what they are doing.

• To Err is Human

• To Drift is Human

• Cognitive Bias is Human

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To Err is Human

Unintended action or omission
• Slip, lapse, or mistake
• Active (mosquito)
• Latent (swamp)

What are some examples?

How do we feel when we make an error?

WRONG WAY

Oops!

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To Drift is Human

Humans drift from safe behaviors when:
• We become comfortable with a situation
• We don't recognize the risk
• We become comfortable with the risk
• We believe the risk is justified

What are some examples?

Does drift make us bad people?

STOP ALL-WAY

SPEED LIMIT 70

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Cognitive bias

- Mental shortcuts which are inherent in how the human brain works.
- Systematic errors in thinking that may lead to errors or unintended outcomes.
- Probably due to our limited capacity to process the available information in a short amount of time.
- Often used in complex, unfamiliar, uncertain, time-pressured situations.
- Hundreds of types of cognitive bias.

Korteling, Brouwer, Toet, 2018

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Common types of cognitive bias

Examples of common biases that can contribute to error at work:

- **Skill-based:** (frequency) inattentive to the task because they perform it so much, become comfortable with risks, and are less sensitive to hazards that are present. "Auto-pilot"
- **Rule-based:** (similarity) don't notice subtle differences in items or procedures that are similar. "Look alike, sound alike"
- **Knowledge based:** (confirmation) confident about their knowledge and beliefs and look for information that supports that belief. "Missed diagnosis"
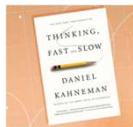
Korteling, Brouwer, Toet, 2018

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Thinking frameworks:

System 1: Thinking Fast
- intuitive
- automatic
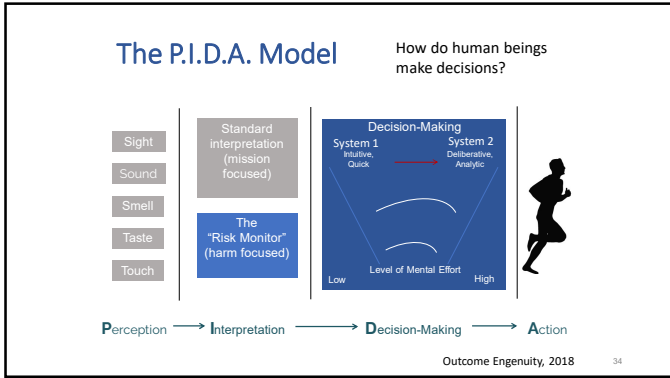- quick decision making
- lower effort

System 2: Thinking Slow
- deliberate
- analytic
- conscious,
- higher effort

Kahneman (2011); Korteling, Brouwer, Toet (2018)

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The P.I.D.A. Model

How do human beings make decisions?

Sight	Standard interpretation (mission focused)	Decision-Making
Sound		System 1 — Intuitive, Quick → System 2 — Deliberative, Analytic
Smell		
Taste	The "Risk Monitor" (harm focused)	Level of Mental Effort
Touch		Low High

Perception → **I**nterpretation → **D**ecision-Making → **A**ction

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Human Factors

Examines the relationship between humans and the systems with which they interact.

Acknowledges the universal nature of human fallibility.

Seeks to optimize the interaction between humans and technology.

Seeks to understand how people perform under different conditions so that systems, processes, equipment and products can be designed to improve performance and safety.

I am sans.
I am serif.

World Health Organization, 2012.
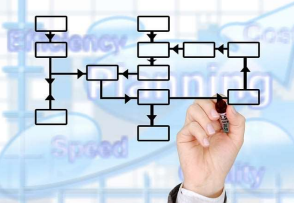
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HUMAN "PERFORMANCE SHAPING" FACTORS
FACTORS THAT INFLUENCE HUMAN PERFORMANCE

INTERNAL	EXTERNAL	
INDIVIDUAL	INDIVIDUAL	SYSTEM
ALERTNESS	LIGHTING	COMPUTER-HUMAN INTERFACE
ANXIETY, STRESS, ILLNESS	NOISE	TASK COMPLEXITY
KNOWLEDGE OF TASK, PROCESS, SYSTEM, RULES	MONOTONY	CULTURE
HEARING ABILITY, VISION, HEIGHT	DISTRACTION	WORKLOAD PRESSURE
CONFIDENCE	LOOK ALIKE, SOUND ALIKE	TOOL DESIGN
ATTENTIVENESS, CONCENTRATION	PEER PRESSURE	WORKPLACE LAYOUT

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What is a System?

- any collection of two or more parts interacting to achieve a common aim
- an interdependent group of items forming a unified whole
- the components may be both *human* and non-human

- A *complex system* is one in which there are so many interacting parts that it is difficult to predict how the system will behave.

Delivery of health care is an example of a complex system.

World Health Organization, 2012; Institute of Medicine, 2000.

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What makes healthcare delivery complex? What do you think?

- Task diversity
- Diversity of humans within the system (patients, clinicians, staff)
- Number of interactions
- Dependency of healthcare providers on each other
- Variation in physical layout, processes, policies
- New technology
- Specialization
- Vulnerability of patients

World Health Organization, 2012

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Systems Approach

Looks at health care as a whole system, with all its interdependence and complexity.

Examines organization factors that underlie errors, process problems, suboptimal teamwork, and undesired outcomes.

Seeks to change or redesign the system rather than blame or "fix" people.

Uses deliberate design to promote safe care.   **Make it easy to do the right thing**
Make it hard to do the wrong thing

We cannot change the human condition, but we can change the conditions under which humans work.
~ James Reason

World Health Organization, 2012

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Annie's story

- What human factors can you identify in Annie's story?

- What system design factors can you identify?

- How about cognitive bias?

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Housekeeping

A housekeeping worker was waxing the floors around 10:00 p.m. He could not find a wet floor sign and would have had to go to another building to search for one. Believing he was alone in the building, he did not search for a warning sign. The Chief Financial Officer slipped on the wet floor and severely damaged his knee. The housekeeping staff frequently had to search for the wet floor warning signs which caused them to get behind in their work. The housekeeping manager was aware of the unavailability of signs, but did not take any action to purchase more.

- **What human factors can you identify in this story?**

- **What system design factors can you identify?**

- **Can you think of examples of cognitive bias or thinking frameworks which may have been involved?**

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Donabedian Model

Structure → Process → Outcome

Structure	Process	Outcome
Environment and resources needed to provide services.	Techniques and practices implemented to provide care.	End results realized by the recipient of the process.
Facilities, equipment, staff, money, supplies. Leadership organization and operations.	Procedures and steps. A set of activities.	Quality and safety of care or service. Heath outcomes related to care provided.
Example: Number and qualifications of pharmacists in a hospital.	Example: Pharmacy policies and procedures used to deliver services to patients.	Example: Medications received by patients in a hospital.
How is the system designed to work? Are appropriate resources allocated to reduce the likelihood of harm?	How do the components work together? How often do we do what we are supposed to do?	What is the end result? Is care/service safe? How often do we harm?

Donabedian, 1966, 2003; Makary, Martin, Sexton, et.al, 2006.

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Swiss Cheese Model of System Failure

Reason, 1990, 2000
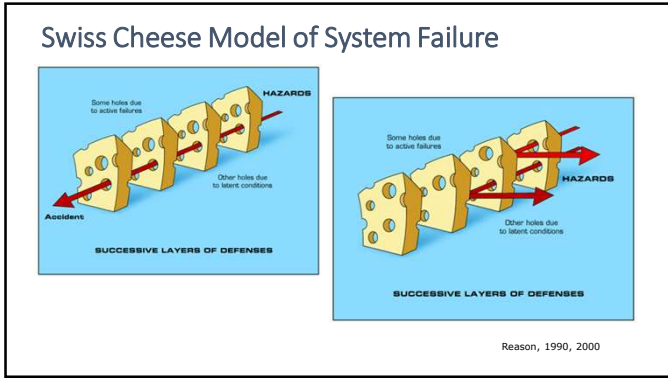
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Examples of layers of defenses in system design

Type	Example
Architectural/physical plant changes	Remove certain types of medications from medication dispensing units.
Usability testing on devices	Perform heuristic tests of glucometers and test strips and select the most appropriate device for population and users.
Engineering control (forcing function, hard stop)	Require sign out from one patient record in the E.H.R. before accessing another patient record. Require allergy information completion in the E.H.R. before a medication can be ordered.
Redundancy	Use two clinicians to INDEPENDENTLY calculate high-risk medication dosage.
Standardize on equipment or process	Standardize crash carts.
Checklists/cognitive aids	Use pre-procedure checklists. Use Tall Man lettering on medications.
Training with simulation and practice/proctoring	Practice delivering a baby in a simulation lab, then practice with a proctor for a certain number of deliveries.

Commonwealth of Massachusetts, 2012; Hettinger et al., 2013; IHI, 2019

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Hierarchy of Interventions

©2022 Institute for Safe Medication Practices (ISMP)

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Slide 46
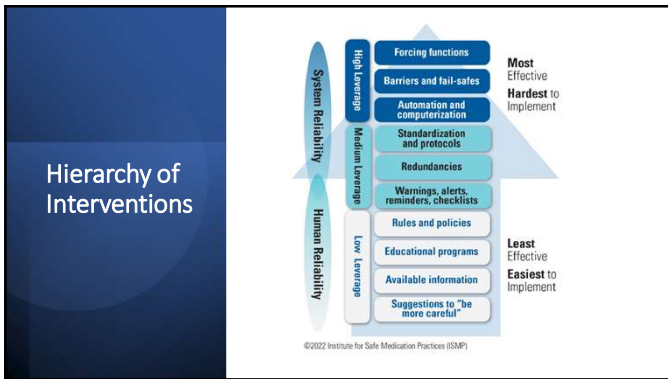
Every system is perfectly designed to get the results it gets.

~ The W. Edwards Deming Institute.

Structure Process Outcome

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Slide 47

Questions?
Concerns?
Ideas?

- As a leader, you are accountable for system design and performance

- Be aware that humans will make mistakes and drift from safe behavior

- Use your knowledge of human fallibility and human factors to design safer systems that make it harder to do the wrong thing and easier to do the right thing

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Slide 48

Mission, Values, and Expectations

System Design

Managing Behavioral Choices

Learning

Justice

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accountability

fairness   justice

Leadership

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Do The Right Thing

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Human Fallibility and Intentions

We are going to do things we do not intend to do.

Human error = mistake, slip, lapse

Human beings are also creatures of free will.

We make hundreds of choices every day.

Some of our choices are not ideal.

As human beings, we drift from safe choices.

We also make choices that are self-serving.

The Just Culture Company, 2021   51

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Five Human Behaviors = Five Intentions

1. **Purpose**
2. **Knowledge**
3. **Reckless Behavior**
4. **At-Risk Behavior**
5. **Human Error**

Marx, 2019;The Just Culture Company, 2021

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Human Intentions

Outcome

Intention regarding the <u>outcome</u> – to cause harm

Conduct

Intention regarding <u>the act itself</u> – to take a risk

Marx, 2019;The Just Culture Company, 2021   53

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Human Intentions

Outcome

Purpose: conscious objective to cause harm

Knowledge: having knowledge that harm is practically certain to occur

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Conduct

Marx, 2019;The Just Culture Company, 2021   54

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Purpose

KEY = intent toward outcome

NEVER JUSTIFIABLE!

55

55

Knowledge

KEY = intent toward outcome

❑ Evil
☑ Lesser Evil

FIVE DAYS AT MEMORIAL
SHERI FINK

RARELY JUSTIFIABLE

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Human Intentions

Outcome

Purpose: conscious objective to cause harm

Knowledge: having knowledge that harm is practically certain to occur

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Conduct

Reckless

At-Risk Behavior

Human Error

"THE THREE CORE BEHAVIORS"

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Slide 58

The Three CORE Behaviors

KEY = intent toward act or conduct

Human Error

Inadvertent action: slip, lapse, mistake

Manage through changes in:

- Processes
- Procedures
- Training
- Design
- Environment
- Behavioral Choices

**CONSOLE HUMAN
MANAGE SYSTEM**

NOT A CHOICE!

Oops !

- **Slip** – doing something other than intended
- **Lapse** – an omission – forgot to do something
- **Mistake** – misperception, mistake of fact – looked at A, but saw B

- Have you ever made an error? Can you share an example? How did you feel?
- How can you support the people in your organization – set them up for success?

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Slide 59

The Three CORE Behaviors

KEY = intent toward act or conduct

"Drift"
- Why do we drift?

- What are some examples of drift?

SPEED LIMIT 55

At-Risk Behavior

A choice: risk not recognized or believed justified

Manage through:

- Removing incentives for at-risk behaviors
- Creating incentives for healthy behaviors
- Increasing situational awareness

**COACH HUMAN
MANAGE SYSTEM**

What is an "incentive" for at-risk behavior?

- Help employee "see" and understand the risk
- Make the **right** thing to do the **easy** thing to do

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Slide 60

The Three CORE Behaviors

KEY = intent toward act or conduct

- This is where we "draw the line."

- Intentionally taking a "gamble" on the outcome.

- This is the one behavior we expect our employees to <u>absolutely avoid</u>.

What is a real-world example of reckless behavior?

Reckless Behavior

Conscious disregard of a substantial and unjustifiable risk

Manage through:

- Remedial action
- Disciplinary action
- Punitive action

**PUNISH HUMAN
MANAGE SYSTEM?**

- Consult with HR on appropriate disciplinary action
- Consider review of hiring and oversight processes

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The Biggest Threat To Safety?

Human Error	At-Risk Behavior	Reckless Behavior
Inadvertent action: slip, lapse, mistake	*A choice: risk not recognized or believed justified*	*Conscious disregard of a substantial and unjustifiable risk*
Manage through changes in:	Manage through:	Manage through:
• Processes • Procedures • Training • Design • Environment • Behavioral Choices	• Removing incentives for at-risk behaviors • Creating incentives for healthy behaviors • Increasing situational awareness	• Remedial action • Disciplinary action • Punitive action
CONSOLE HUMAN MANAGE SYSTEM	**COACH HUMAN MANAGE SYSTEM**	**PUNISH HUMAN MANAGE SYSTEM?**

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Quiz: Why Is At- Risk Behavior The Biggest Threat To Safety?

a. Human errors are often single events or failures

b. Reckless behaviors do not occur frequently

c. At risk behaviors can become habitual and pervasive

a. All of the above

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Exercise:

How/why do at-risk behaviors become habitual and pervasive?

What you permit, you promote.

As humans, we **drift** from safe behavior
Nothing bad happened before (risk not recognized)
This is the way we've always done it
Everyone else does it
"Incentives" may exist for at-risk behavior
Compliance with safe practices is not the priority
Compliance with safe practices is not the standard
Compliance with safe practices is not monitored
Compliance with safe practices is not enforced

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Crossing The Line

How do we determine?

Purpose to Cause Harm

Knowingly Cause Harm

Reckless

_____ "The Reasonable Person"

At-Risk Behavior

Human Error

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The Three "Voices"

LEADERSHIP
Determines mission and values
Determines risk and tolerability
Creates and enforces the rules

SUBJECTIVE STANDARD
Review the P.I.D.A. Model: what did this person
perceive, interpret, and decide (if it was a decision)
leading into their action?

OBJECTIVE STANDARD

Reasonable Person Test (similar person, similarly
situated, substitution test)
For JC, preference is within your org. culture

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Leadership

DEFINITION

- Determines Mission, Vision, Values
- Sets the standards, rules and expectations
- Determines the risk threshold
- Imposes the rules
- Determines justice

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Subjective Standard

DEFINITION:
Black's Law Dictionary, 8th ed.

A legal standard that is peculiar to a particular person and based on the person's individual views and experiences.

It's a Fan!
It's a Spear!
It's a Wall!
It's a Rope!
It's a Snake!
It's a Tree!

Global Action Plan International   © 2011 Marilyn Mehlmann

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Objective Standard

DEFINITION
Black's Law Dictionary, 8th ed.

A legal standard known as "The Reasonable Person Standard," this is a "similar person in a similar situation."

The "substitution test"

What is another healthcare example of the objective standard when determining whether a person's actions were appropriate and reasonable?

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Workplace Justice - We Are All Judges

Purpose	Knowledge	Reckless	At-Risk	Error
• Intent to harm	• Intent to act, knowing harm will occur	• Choice to gamble with the outcome	• Drift from safe behavior	• Unintended act or omission

- Each action has its own level of accountability
- We do not expect perfection from humans – instead, we expect safe choices
- We all watch how the organization responds to each of these behaviors – this shapes employee views of workplace justice (Marx, 2019)

Marx, 2019;The Just Culture Company, 2021   89

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Questions?
Concerns?
Ideas?

- ✓ Understanding intent can help you develop a fair, consistent system of workplace justice.

- ✓ Use the three voices – Leader, Subjective, Objective - to help you determine intent and respond appropriately.

- ✓ We do not expect perfection – we expect safe choices.

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10-minute break?

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Mission, Values, and Expectations

System Design

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Learning

Justice
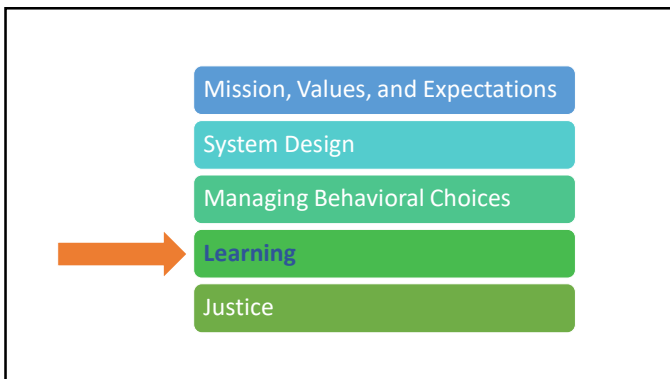
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Learning Culture: Hungry For Knowledge

Shifts the focus
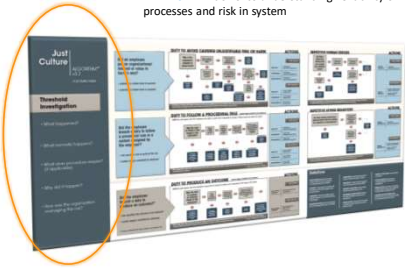
- Less focus on the error, event, outcome

- More focus on understanding:
  - Risk in the system
  - System design
  - Behavioral choices
  - Human factors that contribute to errors and choices

Outcome Engenuity, 2018

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EVENTS = windows to understanding reliability of work processes and risk in system

Structured, consistent, fair approach to event investigation = learning from events = improved reliability = better outcomes

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Threshold Investigation

- What happened?
- What normally happens?
- What does procedure require?
- Why did it happen?
- How were we managing it?

Increasing Value

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Threshold Investigation

What happened?

- <u>Subjective</u> standard
- Interview person(s) involved in the event
- Tell them how you will use the information
- Use open-ended questions
- Let them tell their story about what happened
- Listen
- Review any related documentation looking for the facts

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Threshold Investigation

What normally happens?

- Interview the person involved
  - Walk you through the process
  - How is this job/action usually performed?
  - What is "the norm"?
- Interview a similarly situated person – same questions as above
- Look for the <u>objective or reasonable person standard</u>
- Perform the "substitution test"
- Tell them how you will use the information
- Use open-ended questions
- Let them tell you about how the process is currently working
- Listen
- The "norm" is not the reason why a violation occurred; instead it can tell you the prevalence of the behavior

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Threshold Investigation

What does procedure require?

- Why wait to ask this now? Why not ask this first?
- Ask someone not involved in the event
- Look it up
- This will tell you:
  - What was supposed to happen
  - How the system was designed to work
  - What else might this tell you?

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Threshold Investigation Findings:

3 Mental Models

WHAT HAPPENED IN THIS EVENT	HOW THE TASK IS NORMALLY DONE	HOW THE SYSTEM WAS DESIGNED TO WORK

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Housekeeping

A housekeeping worker was waxing the floors around 10:00 p.m. He could not find a wet floor sign and would have had to go to another building to search for one. Believing he was alone in the building, he did not search for a warning sign.

The Chief Financial Officer slipped on the wet floor and severely damaged his knee. The housekeeping staff frequently had to search for the wet floor warning signs which caused them to get behind on their work. The housekeeping manager was aware of the unavailability of signs, but did not take any action to purchase more.

No Wet Floor Sign: Answer the first 3 Threshold Questions

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Threshold Investigation

Why did it happen?

- Begin looking for causes (not blame)
- Remember that a person who has erred may not know why they have erred
- Seek to understand the process so you can see the risks involved
- Look for performance shaping factors
- Look for system design factors

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Threshold Investigation

Why did it happen?

Five rules of causation
1. Seek to explain the causes behind each human error
2. Search for an explanation for every at-risk behavior
3. Failure to act is only causal when there is a pre-existing duty to act (from where does the duty arise?)
4. Negative descriptors should not be used (poorly, inadequately)
5. Clearly show the cause-and-effect relationship

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Human Performance Shaping Factors

FACTORS THAT INFLUENCE HUMAN PERFORMANCE

INTERNAL	EXTERNAL	
INDIVIDUAL	**INDIVIDUAL**	**SYSTEM**
ALERTNESS	LIGHTING	COMPUTER-HUMAN INTERFACE
ANXIETY, STRESS, ILLNESS	NOISE	TASK COMPLEXITY
KNOWLEDGE OF TASK, PROCESS, SYSTEM, RULES	MONOTONY	CULTURE
HEARING ABILITY	DISTRACTION	WORKLOAD PRESSURE
CONFIDENCE	LOOK ALIKE, SOUND ALIKE	TOOL DESIGN
ATTENTIVENESS, CONCENTRATION	PEER PRESSURE	WORKPLACE LAYOUT

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Introduction To Causal Diagramming

Starting Point: 5 Threshold Questions

1. Identify the undesired outcome far right-hand side
   - Harm to persons
   - Harm to property
   - Increased risk (likelihood and potential to cause harm)

2. To the left, from top to bottom in order of time, identify the **direct** and **probabilistic** causes that had to line up for this harm or potential harm to occur (the "**but for**" causes)

3. Ask "why?" for every error and every choice to continue to identify direct and probabilistic causes. If you don't know "why", don't assume…investigate.

4. Assess breaches of duty using the Just Culture Algorithm™

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Housekeeping

ANSWER KEY

Step 4: Assess each breach of duty using the Just Culture Algorithm™

- A Cause of the Human Error
- Behavioral Choice
- Human Error
- A Cause of the Behavioral Choice
- The Undesired Outcome
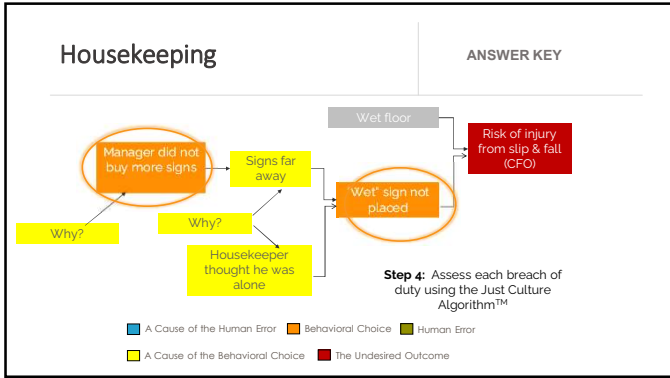
85

Questions?
Concerns?
Ideas?

- ✓ Events are opportunities to understand the risks inherent in your systems and processes.

- ✓ Just Culture shifts focus from errors and outcomes to learning about systems and behaviors.

- ✓ Using a structured approach to event investigation will improve organizational learning.

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- Mission, Values, and Expectations
- System Design
- Managing Behavioral Choices
- Learning
- **Justice**

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Which Duty?

HELPFUL HINTS

The duty to avoid causing unjustifiable risk or harm — Refrain From

The duty to produce an outcome — To Do

The duty to follow a procedural rule — How To

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Duty To Produce An Outcome "To Do"
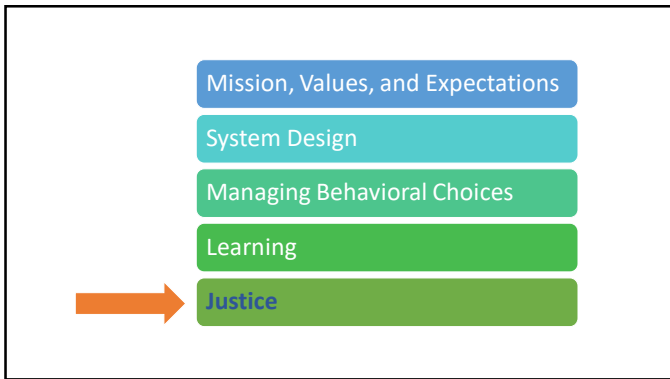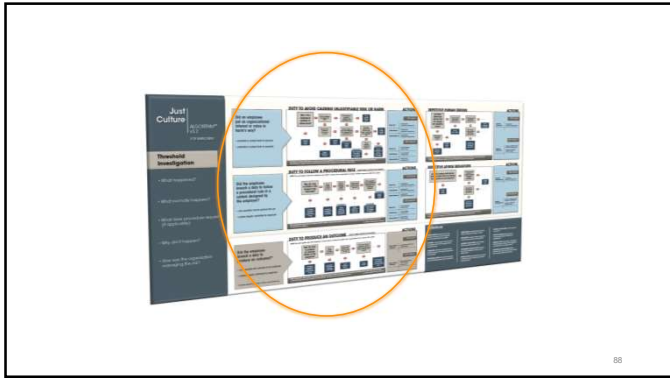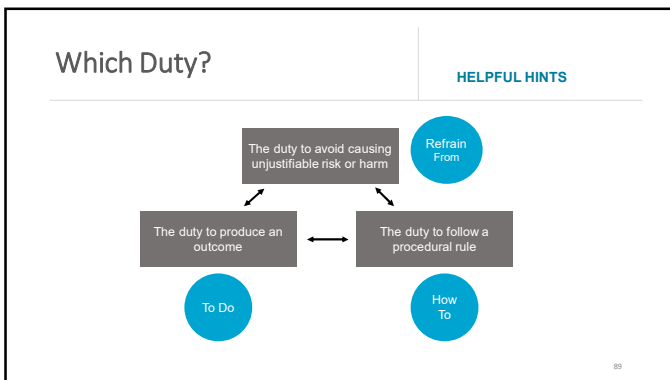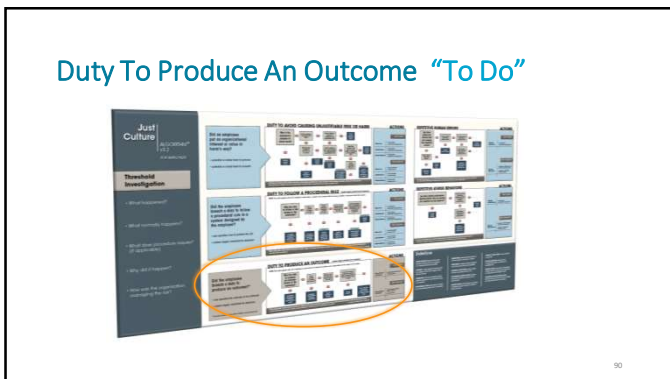
90

Late to Work

Which duty?

The medical records clerk has been having trouble getting to work on time. He has a three month old child and has found the early morning daycare drop-off to be quite difficult. He has been counseled by the medical records supervisor about his repetitive tardy arrivals at work. He has been put on notice that, per policy, one more tardy day this month would result in disciplinary action. Today, he arrived late to work again. He claims that he was stuck behind an accident on the freeway that had caused the freeway to be closed – trapping a ½ mile stretch of cars on one section of the freeway for about 30 minutes. The freeway closure was verified by television news reports.

91
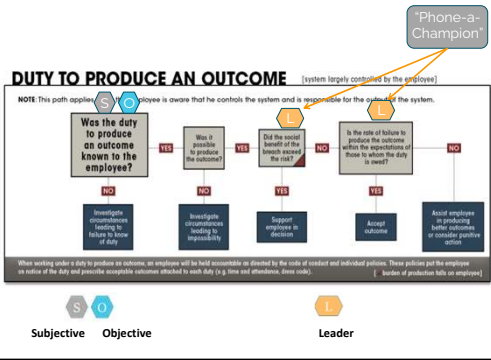
92

Duty To Follow A Procedural Rule "How To"

93

Slide 94
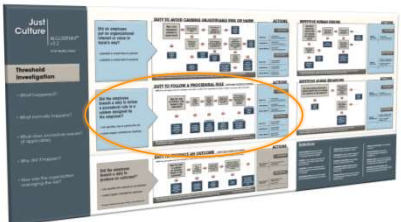
Hand Hygiene

Which duty?

A hospital had been working very hard to improve hand hygiene to prevent infections and keep patients safe. All staff were to use hand gel upon leaving and entering every patient room, with no exceptions. Secret shopper audits showed excellent compliance with hand hygiene on nursing units.

While completing care for patient A, a nurse turned around to see Patient B, across the hall, crawling out of the end of the bed.

Patient B was an elderly frail female with osteoporosis who had been identified at high risk for falls. There was no one else nearby to help.

The nurse quickly rushed across the hall to Patient B's bedside, reaching her just in time to catch her as she tried to stand and began to topple over. The nurse helped Patient B get seated safely on the bed.

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Hand Hygiene

1. What happened?
2. What normally happens?
3. What does procedure require?
4. Why did it happen?
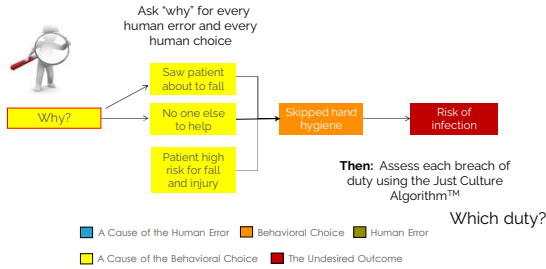
Ask "why" for every human error and every human choice

Why? → Saw patient about to fall / No one else to help / Patient high risk for fall and injury → Skipped hand hygiene → Risk of infection

Then: Assess each breach of duty using the Just Culture Algorithm™

Which duty?

- A Cause of the Human Error
- Behavioral Choice
- Human Error
- A Cause of the Behavioral Choice
- The Undesired Outcome

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Slide 96

DUTY TO FOLLOW A PROCEDURAL RULE [system largely controlled by the employer]
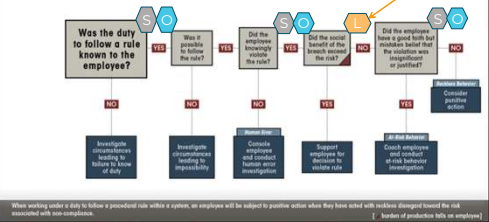
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96

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Patient B had an open wound on her arm, which the nurse inadvertently came in contact with while assisting her. Patient A was being treated for a severe wound infection. Several days later, Patient B's arm wound became infected with the same organism. Patient B later died as a result of the wound infection.

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DUTY TO FOLLOW A PROCEDURAL RULE [system largely controlled by the employer]
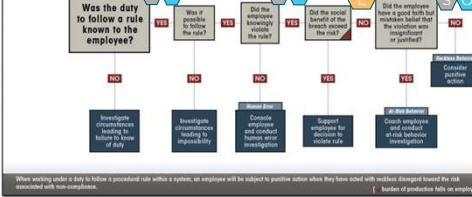
Breaking a rule does not always mean the person's behavior is substantially and unjustifiably risky!

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Duty To Avoid Causing Unjustifiable Risk Or Harm "Refrain From"

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Duty To Avoid Causing Harm
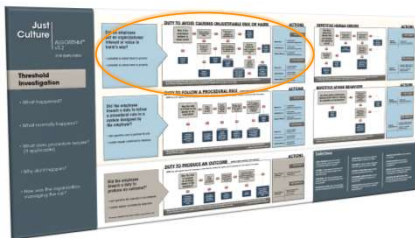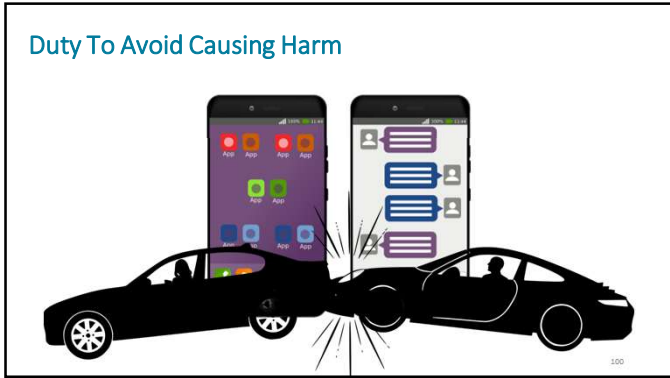
100

Unlabeled Syringe

A nurse arrives at the patient's bed with two syringes in her pocket. One was prepared by the nurse at the central nurse's station; it had no patient name or medication label. The second syringe also did not have a label, and the nurse did not know where it came from. She guessed that she must have also picked it up by mistake from the central nurse's station. Knowing that she just prepared a medication with 2 ml of the drug, and the second unknown syringe only had 1.5 ml filled, she decided to use the unmarked syringe having 2 ml of drug.

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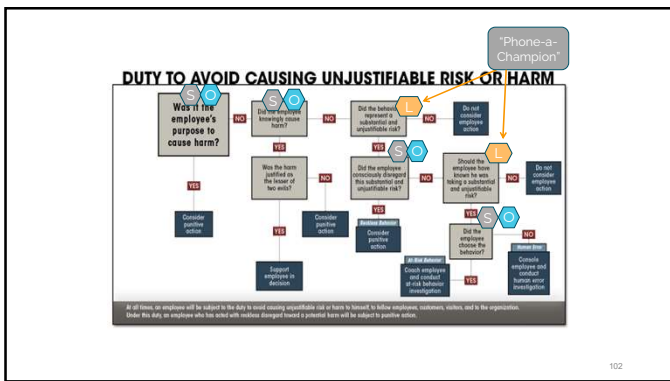
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Repetitive Human Errors And At-Risk Behaviors

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Phlebotomy

A phlebotomist who formerly worked for a blood bank has worked at the hospital for two months. During this time, she has inadvertently left tourniquets on six patients after completing the blood draw and leaving the room. The tourniquets were all found by patients or nurses. Four of the patients were not injured, one patient had a temporary loss of feeling, and another patient sustained a serious injury.

At the blood bank where the phlebotomist previously worked, the procedure was to use blood pressure cuffs instead of tourniquets and to leave them on patients.

The hospital tourniquets are light blue (same color as the patient gowns). The gown sleeves are long and often cover the tourniquets. There is not a standard number of tourniquets in the blood draw trays each day. The phlebotomist does the majority of the blood draws in the hospital and has to move quickly to complete them on time. The lab gets a lot of negative feedback from physicians when test results are not available for morning rounds.

The laboratory director has reminded the phlebotomist twice that she needs to remember to take the tourniquet off before leaving a room. After the fifth incident, the laboratory director warned the phlebotomist that any more mistakes could result in losing her annual bonus. The phlebotomist's performance at the blood bank was stellar and she came with highest recommendations. In fact, she was a lead member of a major quality improvement project there. She has recommended some process changes to the lab director, such as changing the color of the tourniquets and using a standard number of tourniquets in the trays, but he insists that the process isn't the problem.

The previous phlebotomist that worked for this hospital was terminated for repetitive errors related to leaving tourniquets on patients.

Source: Nebraska Coalition for Patient Safety

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Wrong Medication

A nurse pulled an IV antibiotic from the automated medication dispensing system for a patient and received an error message when using the barcode scanner on the medication vial. She then scanned the bag of IV solution for the patient and the barcode scanner accepted it.

The nurse had been caring for this same patient for subsequent days and was in a hurry. She had seen similar error message alerts when using the scanner and found they didn't provide much direction. She went ahead and added the IV antibiotic to the IV solution and administered it to the patient. A few minutes later the nurse realized the antibiotic vial was a different color than the one she had used the day before and identified that she had given the wrong antibiotic. She discontinued the IV and reported the error. The patient was not harmed.

This is the third medication error this nurse has had in two months, due to bypassing the barcode scanner. When she was interviewed, she said the barcode scanner is frequently giving error messages. She also noted that the unit is frequently short staffed by at least one nurse and they were short the day of this event.

Other nurses were interviewed about the scanner and agreed that it often gave false error messages, but they normally followed the policy to then have two nurses do an independent double check of the medication and patient before bypassing it and giving the medication.

Source: Nebraska Coalition for Patient Safety

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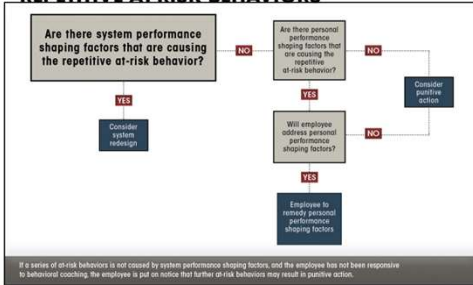
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Threshold Investigation

How were we managing it?

- Use the investigation as a window to risk
- What did you discover as you searched for causes?
- What was the system design around risk?
  - Reliance on human vigilance?
  - System complexity contributing to workarounds?
  - Performance shaping factors within the system?
  - Competing priorities?
- Event investigation is reactive/retrospective

Outcome Engenuity, 2018

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Questions?
Concerns?
Ideas?

✓ Use the Just Culture Algorithm to guide your approach to conducting an investigation.

✓ Identify which duty was breached to help you evaluate human error, at-risk, or reckless behavior.

✓ Just Culture balances system and individual accountability.

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Developing Strong Action Plans In A Just Culture

- Identify system causes
- Respond to human behavior with appropriate just culture follow up – use the JC Algorithm
- Focus on breaking the causal chain
- Select interventions
- Use knowledge of human factors and system design to develop a strong action plan
- Document and communicate your plan
- Evaluate results and adjust (PDCA)
- Communicate results with staff and leaders

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Time Out for an Important Message:

- We have not conducted a Root Cause Analysis (RCA)
- We have walked through steps of a threshold investigation
- These steps are in alignment with an RCA but are somewhat abbreviated
- The steps of conducting a threshold investigation may suffice for many of your events, however, some events will benefit from a Root Cause Analysis
- NCPS will be hosting training webinars in December focused on how to conduct a thorough and effective RCA. For more information, go to: https://www.nepatientsafety.org/news-events/newsroom.html/article/2023/10/06/improving-your-rca2-process

The purpose of our training today is to help you understand just culture, human factors and system design as they relate to creating strong action plans.

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Identify Causal Factors

- Use information from your threshold investigation and causal diagramming
- Remember the five rules of causation
- Test the causal chain
  - "But for" A, would B have happened?
  - If I remove A, does it change the result (B)?

- Identify system factors as far back in the causal chain as you can and focus efforts there

Structure → Process → Outcome

- How were you managing risk? What opportunities for improvement are there?
- Use a parking lot for items that are not causal in this case but need to be addressed

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Breaking The Causal Chain Housekeeping

Look for the "but for" causes
Look for system causes

Wet floor → Risk of injury from slip & fall (CFO)

Manager did not buy more signs ← Why?
Signs far away ← Why?
"Wet" sign not placed
Housekeeper thought he was alone

Step 4: Assess each breach of duty using the Just Culture Algorithm™

- ■ A Cause of the Human Error
- ■ Behavioral Choice
- ■ Human Error
- ■ A Cause of the Behavioral Choice
- ■ The Undesired Outcome

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Which causes to address?

How to build consensus in prioritizing causes to focus efforts and resources.
Try using a risk-based prioritization system, such as the Safety Assessment Code (SAC) Matrix

How the SAC Matrix Works

		SEVERITY			
		Catastrophic	Major	Moderate	Minor
PROBABILITY	Frequent	3	3	2	1
	Occasional	3	2	1	1
	Uncommon	3	2	1	1
	Remote	3	2	1	1

When you pair a *severity* category with a *probability* category for either an actual event or close call, you will get a ranked matrix score:

highest risk = **3**

intermediate risk = **2**

lowest risk = **1**

*These categories apply to actual adverse events and potential events (close calls).

https://www.patientsafety.va.gov/professionals/publications/matrix.asp

IHI RCA2 guide: http://www.ihi.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx

Note: The Joint Commission has a similar tool called the SAFER Matrix.
https://www.jointcommission.org/-/media/tjc/documents/accred-and-cert/safer-matrix/safer-infographic.pdf

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Document findings as causal statements

(1) Cause, (2) Effect, and (3) Event
1. Something (cause) leads to
2. Something (effect) which leads to, or increases the likelihood of,
3. The event.

Examples:

Annie's story
1. The lack of usability testing on new equipment
2. Led to the use of a glucometer with an unclear error message
3. Increasing the likelihood that insulin would be given when not needed.

Housekeeping story
1. The lack of accessibility to wet floor signs AND the housekeeper's perception that he was alone
2. Increased the likelihood that wet floor signs would not be used
3. Increasing the likelihood that someone would be injured from a fall on a wet floor.

See the IHI RCA2 Guide and the VHA RCA Guidebook for additional examples of causal statements written according to the five rules of causation.

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Select Interventions

Make it easy to do the right thing

Make it hard to do the wrong thing

System Reliability / Human Reliability

High Leverage — Forcing functions; Barriers and fail-safes; Automation and computerization — **Most** Effective / **Hardest** to Implement

Medium Leverage — Standardization and protocols; Redundancies; Warnings, alerts, reminders, checklists

Low Leverage — Rules and policies; Educational programs; Available information; Suggestions to "be more careful" — **Least** Effective / **Easiest** to Implement

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Stronger Interventions

Action Category	Example
Architectural/physical plant changes	Replace revolving doors at the main patient entrance into the building with powered sliding or swinging doors. Remove certain types of medications from medication dispensing units.
Usability testing on devices	Perform heuristic tests of glucometers and test strips and select the most appropriate device for population and users.
Engineering control (forcing function, barrier, fail-safe)	Eliminate use of universal adaptors and use tubings/fittings that can only connected the correct way. Require sign out from one patient record in the E.H.R. before accessing another patient record. Require allergy information completion in the E.H.R. before a medication can be ordered.
Simplify process	Remove unnecessary steps in a process (create a quick reference guide for each IV pump maintenance tech instead of a large shared policy and procedure manual)
Standardize on equipment or process	Standardize make and model of medication pumps used throughout the institution. Standardize crash carts. Use bar coding for all medication administration.
Tangible involvement by leadership	Participate in unit patient safety evaluations and interact with staff (walk arounds); support RCA process; purchase needed equipment; ensure staffing and workload are balanced.

Commonwealth of Massachusetts, 2012; Hettinger et al., 2013; IHI, 2019

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Intermediate Interventions

Action Category	Example
Redundancy	Use two clinicians to INDEPENDENTLY calculate high-risk medication dosage. Use TWO patient identifiers at every clinical interaction with the patient. Require a time out for specified procedures.
Warnings, alerts, reminders, software enhancements	Use computer alerts for drug-drug interactions.
Eliminate/reduce distractions	Provide quiet rooms for programming PCA pumps; remove distractions for clinicians when preparing medications.
Checklists/cognitive aids	Use pre-procedure checklists. Use discharge checklist. Place warning sign on MRI door. Use Tall Man lettering on medications. Highlight medication name and dose on IV bag.
Standardized communication tools	Use read-back for critical lab values. Use read-back or repeat-back for verbal medication orders. Use SBAR for communications about patients. Use a standardized patient handoff format.
Training with simulation and practice/proctoring	Practice delivering a baby in a simulation lab, then practice with a proctor for a certain number of deliveries. Conduct disaster drills based on relative hazards periodically and conduct after action debriefs.

Commonwealth of Massachusetts, 2012; Hettinger et al., 2013; IHI, 2019

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Weaker Interventions

Action Category	Example
Warnings	Threaten with remedial action if performance is not improved. Alarms that can be turned off or can be adjusted to not sound.
Education (without simulation or practice)	Demonstrate correct usage of complex medical equipment or technology.
New procedure/policy	Develop a new policy/procedure for usage of complex medical equipment.
Double checks	One person calculates a dosage, another person reviews and verifies. (NOT INDEPENDENTLY calculated.)
Memorandums/reminders	Send a mass email reminding staff to check IV sites every 2 hours.

Check in:
- *Why are these interventions weaker?*
- *Which interventions are most often used in your organization?*
- *Why?*

Commonwealth of Massachusetts, 2012; Hettinger et al., 2013; IHI, 2019

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Intervention Decision Matrix

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Structure	Process	Outcome
Is there leadership support for this change? What resources are needed?	What techniques and practices will be implemented to provide care?	What are the end results to be realized by the recipient of the process?
What facilities, equipment, staff, money, supplies will be needed? How will we organize around this change?	What procedures and steps will need to be developed and mapped out?	What is the quality and safety of care or service we hope to provide? What health outcomes do we hope to achieve?
How will the system be designed to work? Are appropriate resources allocated to reduce the likelihood of harm?	How do the components work together? How easy will it be to do what we are supposed to do?	What is the end result? Is care/service safe? How often do we harm?
Example: Leadership visibly promotes safety. Wet floor signs are purchased and located in housekeeping work areas. Leaders do safety walkarounds.	Example: Policy that wet floor signs are placed in every area where wet mopping is done on all shifts. Procedures are reinforced through periodic training of staff and safety walkarounds.	Example: Absence of slips and falls due to wet floors with no signage placed.

Donabedian, 1966, 2003; Makary, Martin, Sexton, et.al, 2006.

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Action Planning

CAUSAL STATEMENTS AND ACTION PLAN

- ✓ Document a causal statement in the blue bar at the top.
- ✓ Fill in what action item(s) will be implemented to mitigate the causal factor.
- ✓ Complete all columns to monitor progress.
- ✓ Repeat for all causal statements to be addressed in the action plan.
- ✓ Use the PDCA cycle of improvement to implement the action plan.

• Find another example from IHI here:
  http://www.ihi.org/education/IHIOpenSchool/Courses/Documents/ActionPlanning_RCA2.pdf

What advantages might a smaller facility have in creating and implementing action plans?

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Action Plan Example - Housekeeping

CAUSAL STATEMENTS AND ACTION PLAN

1. CAUSAL STATEMENT: The lack of accessibility to wet floor signs AND the housekeeper's perception that he was alone, increased the likelihood that wet floor signs would not be used, increasing the likelihood that someone would be injured from a fall on a wet floor.

ACTION PLAN

Item Number	What (Action Item)	Strength of Intervention (Strong, Intermediate, Weak)	Who (Owner)	When (Date to be implemented)	Measure (What data is to be measured, STRUCTURE, PROCESS, OUTCOME, how, when and target goal)	Follow-up (When will you regroup to check if the action has been implemented and look at the data? How will you know the action is effective?)
1.1	Order more wet floor signs	Strong	Facilities Director	10/15/2023	Develop and maintain consistent par levels of wet floor signs- quarterly. (S)	Check back with EVS manager on 1/15/2024 to see if there are enough signs
1.2	Standardize placement of wet floor signs on all housekeeping closets on all units and on housekeeping carts.	Strong	Facilities Director and EVS Staff	10/15/2023	Conduct par level checks on all units and carts weekly. Target = 95% par levels met. (P)	Check back with EVS staff on 1/15/2024 to see how standardization and placement is working. Adjust if needed.
1.3	Train EVS staff on environmental safety and proper use of wet floor signs. Use teach-back and competency assessments.	Intermediate	EVS Manager	10/30/2023	Percentage of EVS staff who have completed training with teach-back and competency assessments each quarter. (S/P) Target = 95%	Facilities Director and EVS Manager to review training and competency for compliance and effectiveness.
1.4	Add "place wet floor signs" to EVS checklist for floor cleaning.	Intermediate	EVS Manager	10/30/2023	Percentage of EVS carts with checklist. Target = 100% (P)	Assess whether EVS staff use checklist 1/15/2024 and adjust as needed.
1.5	Leadership walk rounds at various time of day to check compliance and do just in time coaching of staff.	Strong	Facilities Director and EVS Manager	11/15/2023	Compliance with placing wet floor signs. Target = 100%	1/15/2024 evaluate any compliance gaps, learn about causes, address issues and coach staff as appropriate.

Completed By: _____ Date completed: _____

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Slide 124
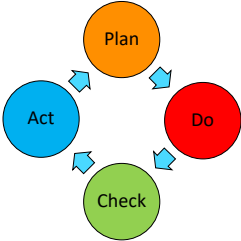
Action planning considerations

- ❑ Have you identified intermediate and stronger actions?
- ❑ Weaker actions may be needed as short-term solutions until stronger actions can be implemented but used alone are unlikely to be enough for sustained improvements.
- ❑ Who needs to be involved in planning improvements?
- ❑ Who can approve action plans? Who has authority?
- ❑ What timeline are you considering for implementation?
- ❑ Can you do a test of change first and then a broader implementation?
- ❑ What barriers exist? How will you mitigate those?
- ❑ How will you engage staff in the changes?
- ❑ Who needs to know about the changes? How will you communicate the action plan?

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Keep Going… PDCA

- **Plan** the intervention

- **Do** the test of change

- **Check** the results

- **Act** based on the results. Tweak if needed. Use information to plan and implement wider changes.

- **Repeat** as needed until results are satisfactory

Plan → Do → Check → Act

https://asq.org/quality-resources/pdca-cycle

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Traffic Light Report Example

- Green: project complete
- Yellow: in progress
- Red: on hold or can't be done – list reasons why

Action Item	Progress
Wet floor signs ordered and received	Wet floor signs in main housekeeping supply room 10/15/2023
Action Item	**Progress**
Staff training on environmental safety and proper use of wet floor signs	Training with practice and competency completed for 5 of 10 housekeepers by 10/30/2023
Action Item	**Impediment**
Wet floor signs to be placed in all housekeeping closets on units	No room to put hangers to store signs – re-evaluating plan on 10/20/2023

How might closing the feedback loop on action plans from event investigations…
- foster trust?
- improve reporting?
- improve staff engagement?

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Questions?
Concerns?
Ideas?

✓ Direct action plan at system and process problems which are causal. Break the causal chain.

✓ Select strong and intermediate interventions whenever possible.

✓ Follow through on your Action Plan to ensure effectiveness. Use the PDCA cycle to improve.

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Practice With Scenarios

- Everyone will receive the same scenario
- You will each be assigned a role in the scenario
- Work through the provided worksheet to help you conduct the threshold investigation, conduct a causal diagram, and develop an action plan for the scenario
- Use the tools that you have learned about today to conduct your investigation and create an action plan. Copies of some of the tools and some examples have been provided.
- Let us know if you need us to go back to a slide in the presentation to refresh your memory
- We will report out together as a group and discuss your findings and recommendations for action planning
- You will have 20 minutes to work through the scenario and we will have 10 minutes to report out as a group.
- We will share the learning with each other!

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Scenario 1

1. What happened?
2. What normally happens?
3. What does procedure require?
4. Why did it happen?

Ask "why" for every human error and every human choice

Cause (why?)

Why? → Cause (why?) → Proximal causal factor → Outcome

Cause (why?)

Then: Assess each breach of duty using the Just Culture Algorithm™

☐ A Cause of the Human Error   ☐ Behavioral Choice   ☐ Human Error

☐ A Cause of the Behavioral Choice   ☐ The Undesired Outcome

Which duty? 129

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Scenario 2

1. What happened?
2. What normally happens?
3. What does procedure require?
4. Why did it happen?

Ask "why" for every human error and every human choice

Why? → Cause (why?) → Proximal causal factor → Outcome
→ Cause (why?) →
→ Cause (why?) →
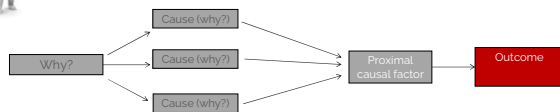
- A Cause of the Human Error
- Behavioral Choice
- Human Error
- A Cause of the Behavioral Choice
- The Undesired Outcome

Then: Assess each breach of duty using the Just Culture Algorithm™

Which duty?

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Resources

- **Nebraska Coalition for Patient Safety (NCPS)** https://www.nepatientsafety.org/
  - RCA, Just Culture, TeamSTEPPS Training
  - Patient Safety Culture Surveys
  - Patient Safety Consulting and Support

- **Brondum Quality Improvement Strategies, LLC** gailbrondum55@gmail.com
  - Just Culture, Quality Improvement, Regulatory Compliance, Root Cause Analysis
  - Training and Consulting

- **Nebraska Association for Healthcare Quality, Risk and Safety (NAHQRS)** https://www.nahqrs.org/

- **Nebraska Hospital Association (NHA)** https://www.nebraskahospitals.org/

- **The Just Culture Company** https://www.justculture.com/
- **Think Reliability (Root Cause Analysis training and webinars)** https://www.thinkreliability.com/
- **Agency for Healthcare Research and Improvement** https://www.ahrq.gov/news/psnet.html
- **Institute for Healthcare Improvement (IHI)** https://www.ihi.org/
- **IHI RCA2 Tools and Action Hierarchy Tool** http://www.ihi.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx
- **Joint Commission** https://www.jointcommission.org/
- **Veteran's Health Administration Center for Patient Safety** https://www.patientsafety.va.gov/
- **Institute for Safe Medical Practices (ISMP)** https://www.ismp.org/

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ISMP
Institute for Safe Medication Practices

Lessons Learned about Human Fallibility, System Design, and Justice in the Aftermath of a Fatal Medication Error

Presented by:
The Institute for Safe Medication Practices and
The Just Culture Company

Link to webinar: https://youtu.be/HkiBsS1QjV0?si=ckKmAC0PLip-NGxh

Link to handouts: https://www.ismp.org/events/lessons-learned-about-human-fallibility-system-design-and-justice-aftermath-fatal-medication

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Open Forum

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Thank You!

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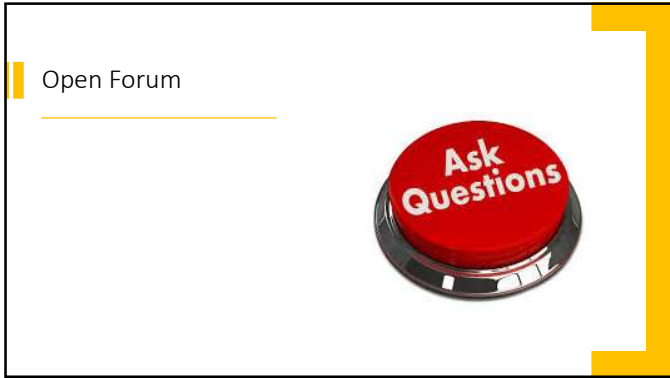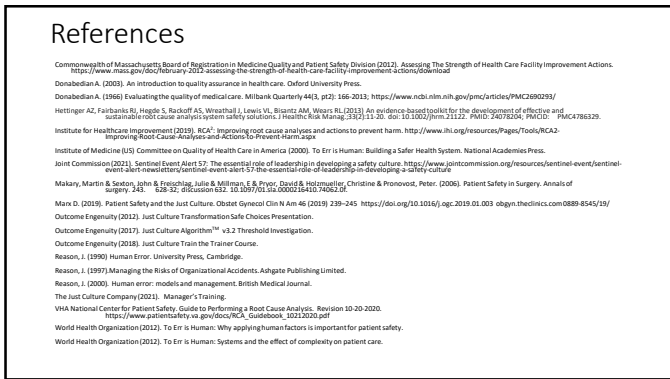Commonwealth of Massachusetts Board of Registration in Medicine Quality and Patient Safety Division (2012). Assessing The Strength of Health Care Facility Improvement Actions. https://www.mass.gov/doc/february-2012-assessing-the-strength-of-health-care-facility-improvement-actions/download

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