

Safety Culture

High Reliability
Conservation

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LeSage, EMT-P, AS, BA, MIS
Assistant Professor, OHSU School of Medicine
Incident Analyst, Advisor
Founding Partner, SGCS

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Who Else?

VIDANT HEALTH
BRIGHAM AND WOMEN'S Health Care
911 Dispatch
American Airlines
Copa Airlines
SickKids
UNITED
LEGACY HEALTH
MGH
caringsafely
INTERDEV
FedEx
AMR
OSHA
Acadian
ProHEALTH CARE
MCHD

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Socio-Technical Systems

Adverse Events
Documented Near Miss

Known
Unknown

System Design
Human Behaviors

The dominant risk within any organization is the day-to-day SYSTEM DESIGN vulnerabilities, and HUMAN BEHAVIORS that present risk – but most of the time we do not see NOR record the danger...

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What Drives Behavior?

* Is it Safety?

* "Safety is our Primary Value"

Really?



"True" High Reliability...

* High Consequence

* Dynamic Operations

* Resilient through System Design

* Integrated, Cross-Functional Regulatory System




Highly Reliable Practices

* Strong System Bias & Collaboration

* Focus on Front-Line Operations

* Recognize/Guard Against Behavior Bias

* Constant Vigilance around Vulnerabilities

* Strategic Allocation of Limited Resources

* Manage "Negative Warnings" Effectively

* Evolve from Rule-Based to Risk-Based





Why System First?

"A bad system will beat a good person every time."

Edwards Deming

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Risky Business

- * Most organizations have **NO IDEA** what their baseline rate of human error is or should be related to each task, system, and performance goal.
- * Too often, they set **ZERO**
- * You can set zero on a choice, but not on a cognitive process or task.

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Human Error Never Stands Alone

- Human Error: The inadvertent act. Doing something other than what was intended.
 - Was there a **Personal Performance Factor**?
 - Fatigue, distraction, stress, experience, etc.
 - Plan should include: Remediation as necessary
 - Was there a **Behavioral Choice that increased risk**?
 - Was there a *duty* associated with the choice?
 - At-Risk or Reckless choice?
 - Plan should include: Coach or Corrective
 - Was there a **System Contributor**?
 - Environment, interface, operational constraint, etc.

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High Reliability Test...

STRONG System-Focused	Resilient system solutions that make the behavioral contributors (human errors and choices) inconsequential - Effective Automation - Failsafe Mechanisms - Fencing Functionality - Architectural Plan Improvements - Improved Devices with Usability Testing - Optimal Process Re-Design and Simplification
MODERATE System/Behaviors Focused	Strengthened system solutions combined with improved perception of risk and behavioral choices - Eliminate/Reduce Distractions - Simulation Practice - Checklist/Cognitive Aides - Eliminate "Look- & Sound-Alikes" - Standardization of Equipment and Processes - Increased Detectability - Optimize Redundancy
WEAK Behavior-Focused	Behavior-focused attempts to manage risk solely through rule compliance, education, or the addition of procedural steps without strengthening systems - Additional Documentation - Training/Education - Additional Double Checks - Warnings, Signs - New Procedures - Memoranda/Policies

NOTE: Behavior-only focused strategies will not generally mitigate risk on a long-term basis

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Quality Control or Assurance?

- * Quality Control:
 - * "Inspector #9"

INSPECTED BY:

DATE

- * Quality Assurance:
- * Safety Management Systems (SMS)

Promotion/Support

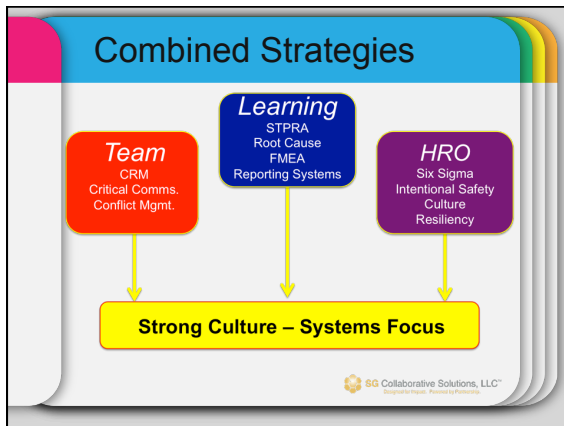
Policy/Culture

Assurance/Monitoring

Risk Management

SMS/RMS

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- ### Cop, Coach, Bartender
- * **Minimum Attributes for Supervisor:**
 - * **Safety Culture Knowledge:**
 - * Deconstructing Systems and Behaviors
 - * Accountability, Safety, Performance
 - * Leadership and Teamwork Training
 - * Followership, Leadership, Support
 - * HR Skills, Legal, Ethical Knowledge:
 - * FMLS, Harassment, Payroll, etc.
 - * Conflict Mgmt – Critical Comm:
 - * Negotiating, Toxicity, Self Awareness
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- ### Key Understanding...
- * A **Proactive** vs. **Reactive** Method
 - * Uses **Risk Perception** and **Events** to determine the **Probability** of future Risk
 - * **NOT** a strategy to determine **FAULT** or **NEGLIGENCE** – but a strategy to **IDENTIFY RISK** and **PROACTIVELY** manage the risk.
 - * **Risk:**
 - * Human – Systems – Both?
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Organizational Impediments

- * All we see are adverse outcomes!
 - * Why are only "harm" events mandatory reporting outside of aviation?
 - * When all we see is the "tip" of the iceberg – we are REACTIVE
- * We have "Overt" and "Covert" messages in our systems –
 - * Safety vs. Production
 - * What are you Coaching towards?
 - * What do you overtly support??


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The Outcome Bias

- * The outcome does not matter to the causal and contributory analysis...
- * Proactive Risk Management is concerned with outcomes *ONLY* as a measure of potential severity, and looks to the likelihood –
 - * What are the costs?
 - * What is the inherent failure rate with the current system?
 - * Can we afford a better system?


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Competing Priorities




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Policy Alone Does not Mitigate Risk

- * It sets SYSTEM and BEHAVIOR expectations. Policies, laws, signs are, simply, behavioral expectations!
 - Work as Planned
 - Policy, procedure, Guideline
 - Work as Performed
 - Front-Line Operations
 - Daily performance



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What Makes us Follow Rules?

- * We must see **RISK** and/or **CONSEQUENCE**



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Prescriptive vs. Autonomous

- * Prescriptive:
 - * Must have TIME to execute cognitively
 - * Good for highly complex, low frequency
 - * Good for when legal steps needed (HR, Finance, termination, etc.)
- * Autonomous:
 - * Highly trained, skilled workers
 - * Dynamic operational scenarios

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Systems Approach

- * Standard Options:
 - * Barriers (Between risk and human)
 - * Redundancy (Unless it's technical, it's weak – human redundancy is a behavior expectation and fails often in the face of production pressure)
 - * Capture Opportunities/Recovery Systems
 - * Allows error to occur – captures downstream
 - * Other strategies:
 - * Audits, socio-technical fixes, etc.


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Common Methods

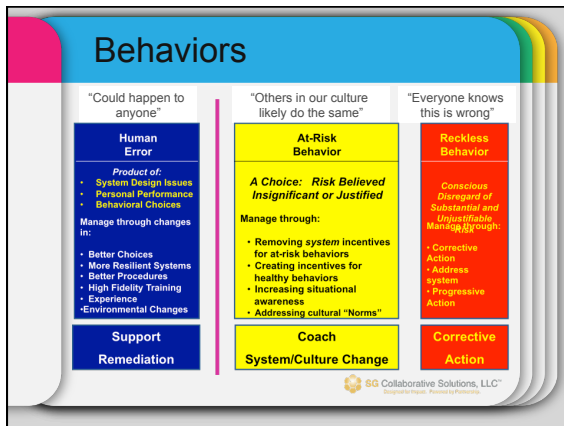
- * Root Cause Analysis
 - * Bias that there is a single "root" cause;
 - * Not probabilistic.
- * FMEA
 - * Designed for systems, does not work well with human fallibility – not usually predictive with HE.
- * "Lean" Processes:
 - * Typically great at determining risks in the system and production issues
 - * Poor at determining human risk – generally assumes human will comply with rules/system.
- * PRA – Where the future lies...


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STPRA

- * Socio-Technical Probabilistic Risk Analysis:
 - * Another name: Cognitive Reliability and Error Analysis Method (Holnagel).
 - * Determines risk probabilistically using **BOTH** systems **AND** behavioral science and analysis;
 - * Builds a **predictive** model – not a reactive model to determine the probability that different interventions and intervention combinations will mitigate risk;
 - * Used extensively in aviation – less so in healthcare, starting to gain wide acceptance in HRO/RRO;
 - * Requires orientation, practice, expertise or model will not be predictive.


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Safety Culture & High Reliability

Contact:

J. Paul LeSage:

- Jon.Paul@sg-collaborative.com
- @JonPaulSGCS (Twitter)
- www.sg-collaborative.com

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