

# Organizational Culture and Human Factors in Healthcare

John Paige, MD

Clinical Assistant Professor of Surgery

LSU Health Sciences Center



# MARDI GRAS RIDDLE

What do...



have in common?

**TEAMWORK!**

**THEY ONLY FUNCTION WELL**

**WHEN THEIR KREWES**

**WORK AS A TEAM!**

# Overview

- Organizational culture and adaptation
- Human factors study and team function

# Key Objectives

- Compare error response in different organizational cultures
- Define the features of a culture of safety
- Discuss the role of human factors engineering in promoting safety
- Illustrate high reliability in team function

# Organizational Culture and Adaptation

# Definitions

- Organizational culture – the patterned way that an organization responds to its challenges
- Organizational learning – the process of increasing the capacity for effective organizational action through knowledge and understanding

# Definitions

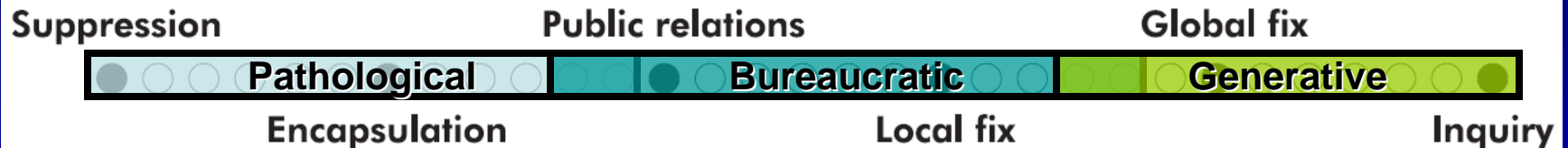
- *Clinical microsystem* – A group of clinicians and staff working together with a shared clinical purpose to provide care for a population of patients
- *Culture of safety* – A culture that views safety as everyone's responsibility, avoids blame, and views errors as learning opportunities

# Organizational Cultural

**Table 1** How organisations process information

Pathological	Bureaucratic	Generative
<b>Power oriented</b>	<b>Rule oriented</b>	<b>Performance oriented</b>
Low cooperation	Modest cooperation	High cooperation
Messengers shot	Messengers neglected	Messengers trained
Responsibilities shirked	Narrow responsibilities	Risks are shared
Bridging discouraged	Bridging tolerated	Bridging encouraged
Failure→scapegoating	Failure→justice	Failure→inquiry
Novelty crushed	Novelty→ problems	Novelty implemented

# Cultural Responses to Error



**Suppression**—Harming or stopping the person bringing the anomaly to light; “shooting the messenger”

**Encapsulation**—Isolating the messenger, so that the message is not heard

**Public relations**—Putting the message “in context” to minimise its impact

**Local fix**—Responding to the presenting case, but ignoring the possibility of others elsewhere

**Global fix**—An attempt to respond to the problem wherever it exists. Common in aviation, when a single problem will direct attention to similar ones elsewhere

**Inquiry**—Attempting to get at the “root causes” of the problem

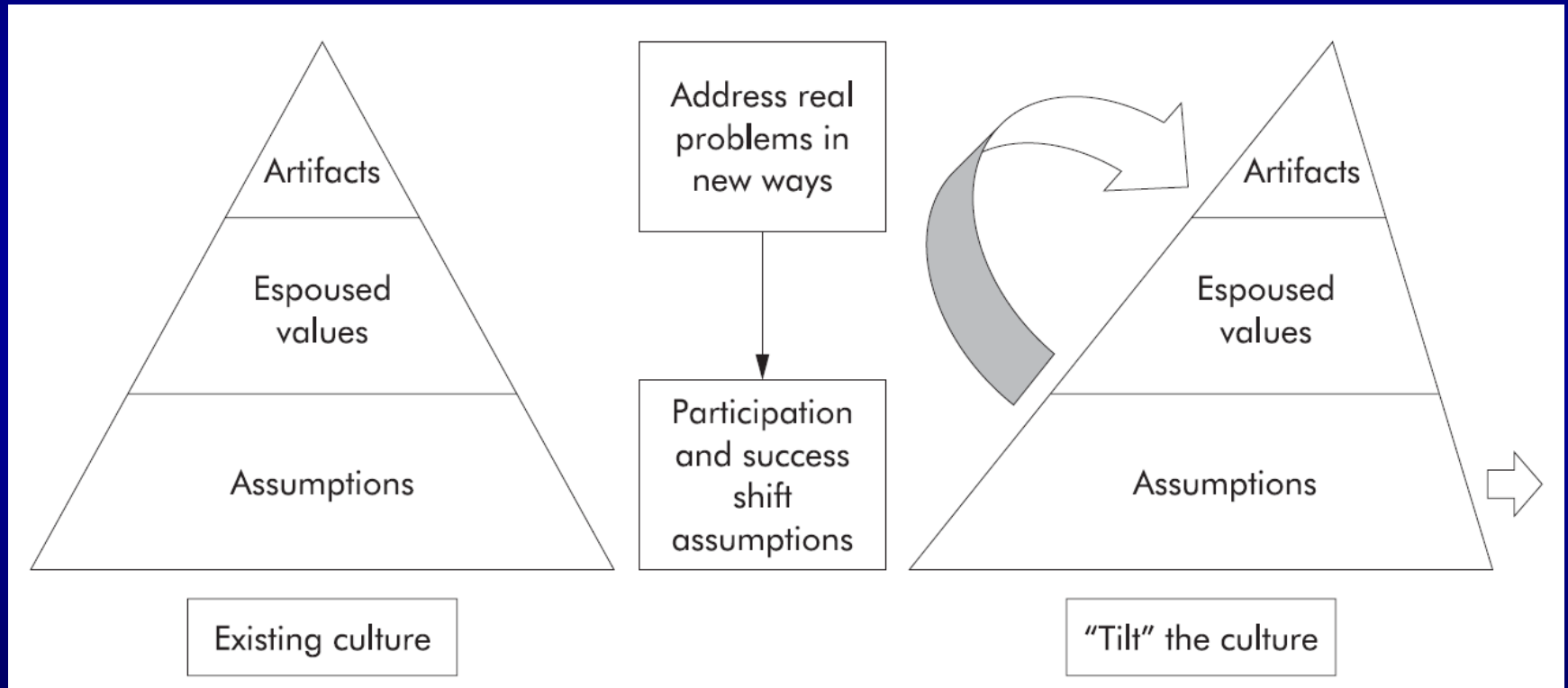


# Performance in Microsystems

## Box 1. Eight dimensions of high performing microsystems

- Constancy of purpose
- Investment in improvement
- Alignment of role and training for efficiency and staff satisfaction
- Interdependence of the care team to meet patient needs
- Integration of information and technology into work flows
- Ongoing measurement of outcomes
- Supportiveness of the larger organisation
- Connection to the community to enhance care delivery and extend influence

# Promoting Cultural Change



# Culture of Safety

- Safety is the primary priority
- Necessary resources are allocated to safety
- Openness exists regarding errors and problems
- Communication is frequent and candid
- Organizational learning is promoted

# Culture of Safety

**Table 1** Properties of high reliability organisations

Property	Contrasted with	Promoted by
Pessimism about possibilities of failure	Optimism that safety is an achieved property Focus on safety awards and specific performance milestones	Culture of doubt and scepticism Procedural counter checks
Focus on representational mistakes	Punishment of failure at performance level	Regulation against action outside analysis Procedural revisions
Generalised failure concern	Focus on specified safety issues	Extended root cause analysis Constant search for improvement Use of reliability proxy variables
Wide distribution of reliability responsibility	Designated safety officer	Many partisans of the neglected perspective

# Culture of Safety in Healthcare?

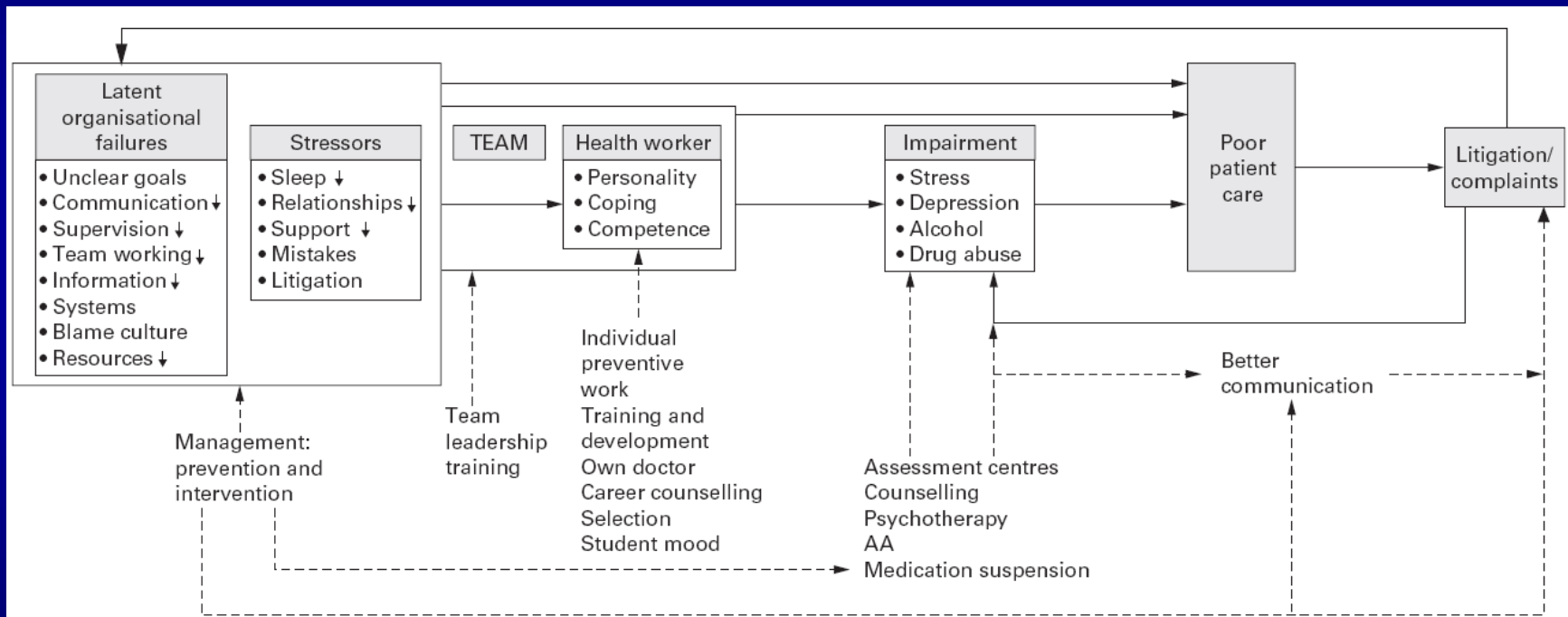


Figure 1 A systems approach to the causes of poor patient care. Reproduced with permission of the publishers from Firth-Cozens.<sup>21</sup>

# Culture of Safety in Healthcare?

Category	Problematic Answer (%)
Senior managers	14.3
Non-senior managers	18.4
Clinicians <sup>†</sup>	19.5
Non-clinicians	15.9
Overall <sup>‡</sup>	18.3

<sup>†</sup>highest for nurses Singer SJ *et al*, Qual Saf Health Care, 2003 12:112-118

<sup>‡</sup>36.5% with neutral ans.

# High Reliability Organizations

- Nuclear power
- Commercial aviation
- Military
- NASA
- Chemical production
- Offshore oil drilling
- ....Healthcare

# Human Factors Study and Team Function

# Human Factors

- Study of the interaction of man with his environment
- World War II origins



<http://www.flightjournal.com/images>

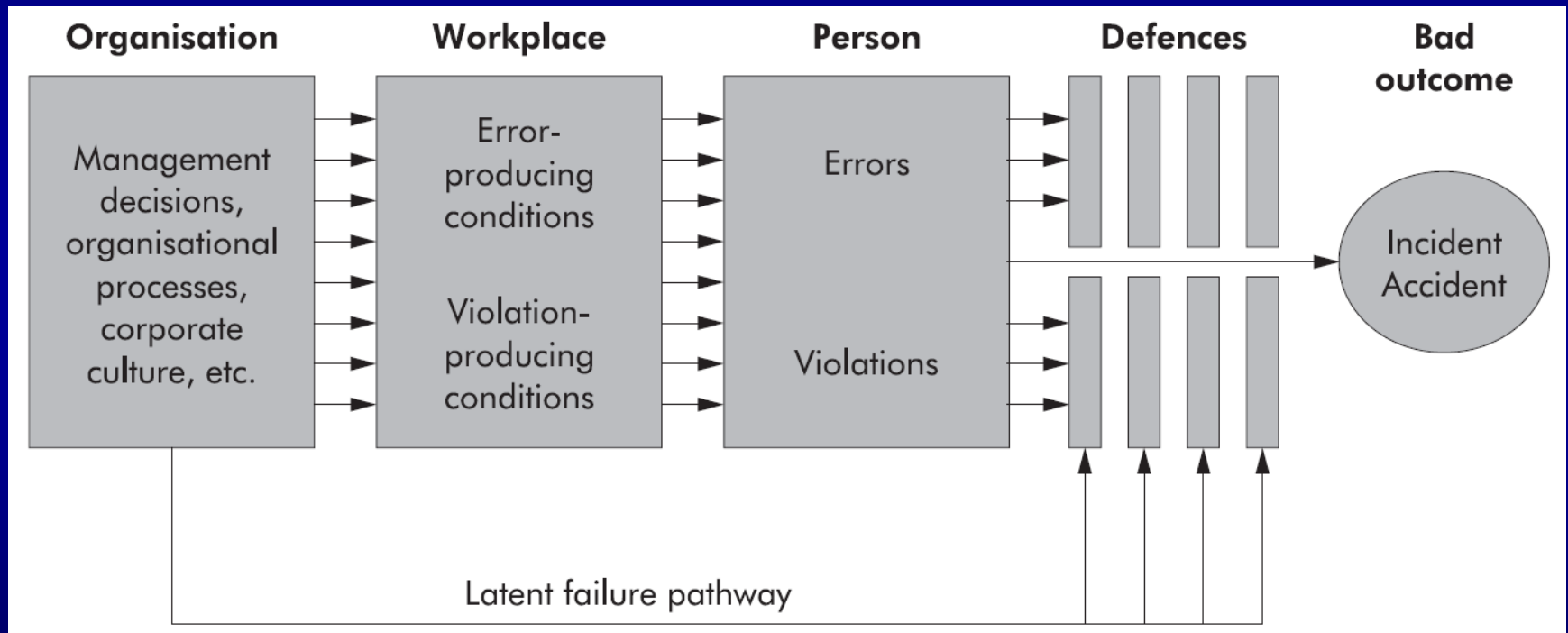
# Human Factors Engineering

- Goal – design systems for safe and effective human use
- Method – optimize the relationship between humans and systems by studying human behavior, abilities, and limitations

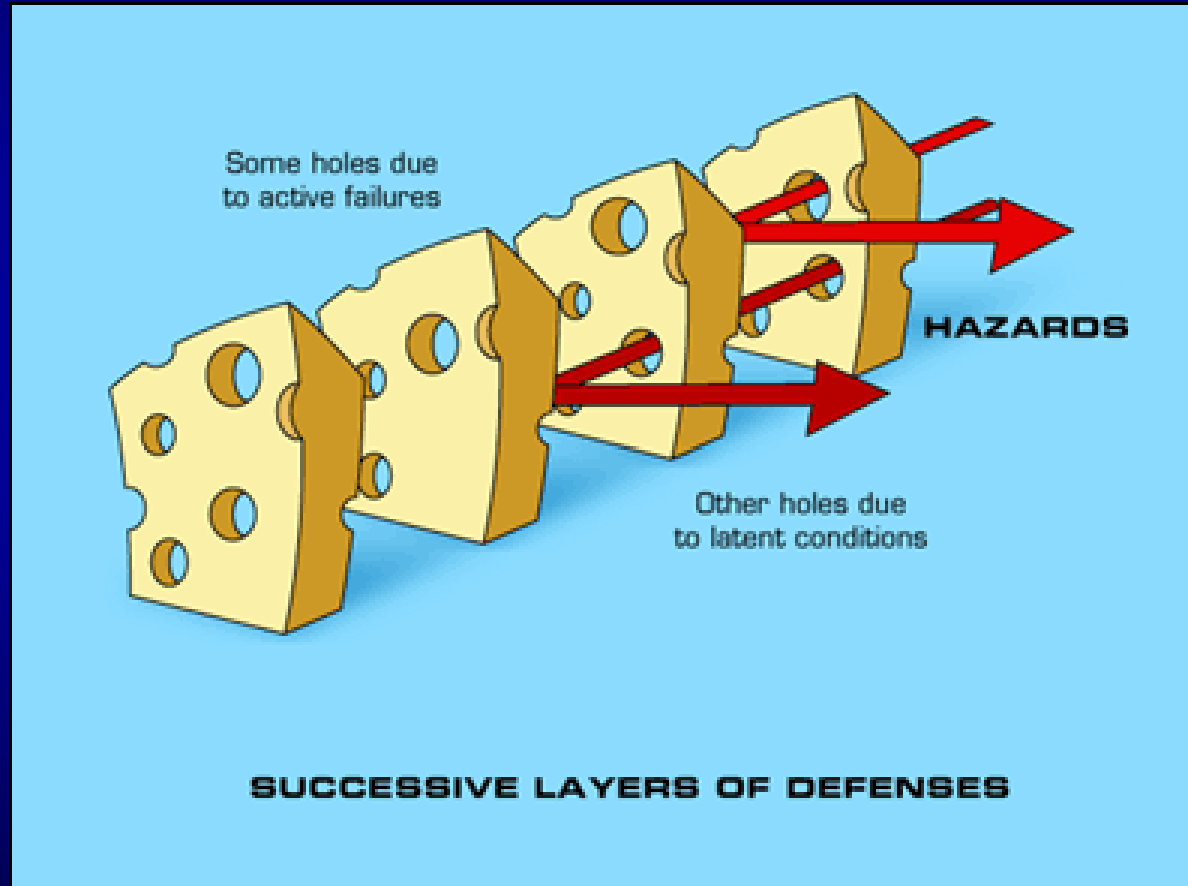
# Human Factors and Error

- Human error is inevitable
- An error-free system cannot be created
- Systems require layers of defense

# Human Error Theory

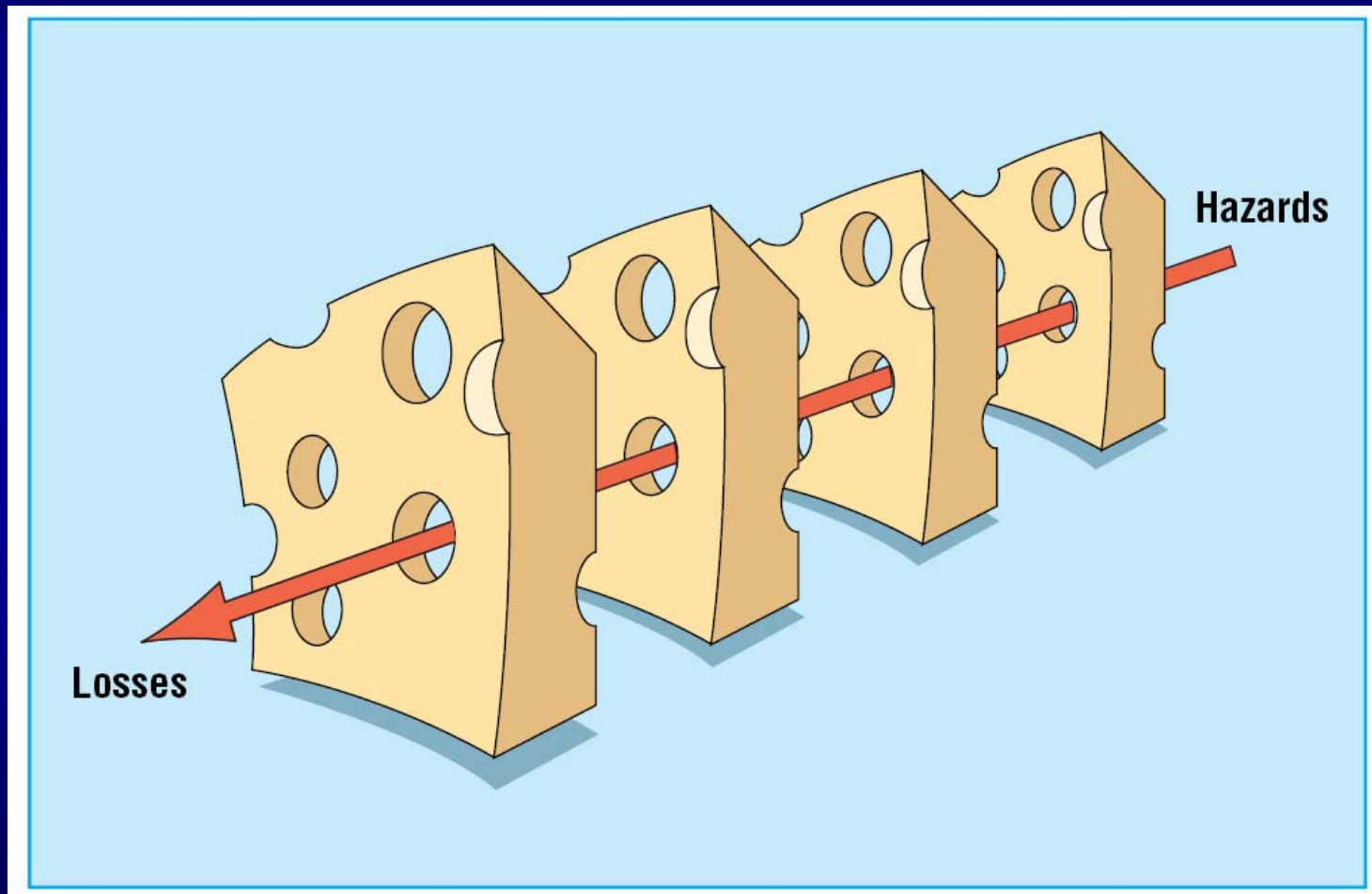


# Swiss Cheese Model of Error



[http://patientsafetyed.duhs.duke.edu/module\\_e/swiss\\_cheese.html](http://patientsafetyed.duhs.duke.edu/module_e/swiss_cheese.html)

# Swiss Cheese Model of Error



# Reducing Error within a System

- Decrease complexity
- Optimize information processing
- Automate intelligently
- Employ constraints
  - Physical
  - Procedural
  - Cultural
- Avoid the unwanted side effects of change

# HFE – Procedural Constraint



**Joint Commission**

on Accreditation of Healthcare Organizations

**Universal Protocol For Preventing Wrong Site, Wrong Procedure,  
Wrong Person Surgery™**

- Preoperative verification process
- Operative site marking
- “Time out”

JCAHO mandate since July 1, 2004

# Naval Aviation and the OR

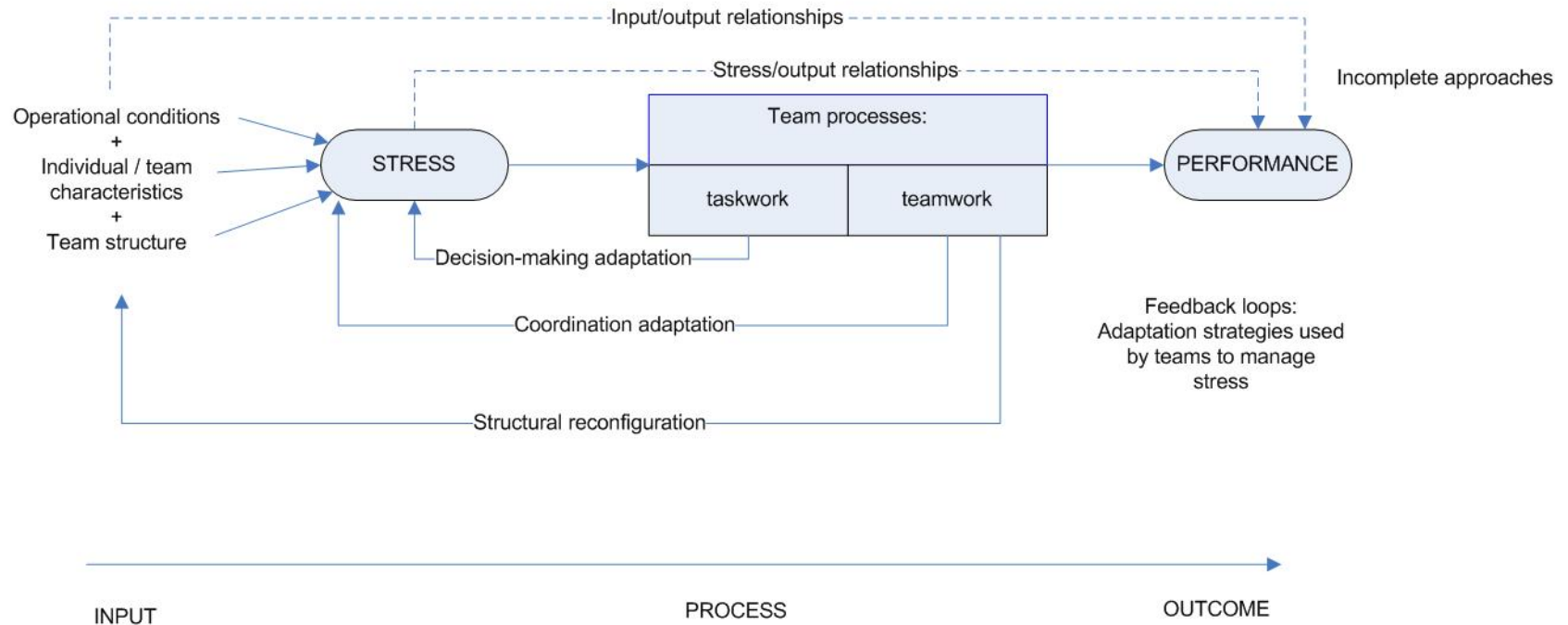
Category	Problematic Answer (%)	Difference vs. naval aviators
Naval aviators	5.6	n/a
All hospital staff	17.5	12 fold
Hospital staff in high risk locales	20.9	16 fold

# Highly Reliable Teams

- Adapt to changes to task environment
- Maintain open and flexible communication
- Anticipate the needs of each member

# Implicit Coordination

THEORETICAL FRAMEWORK FOR TEAM ADAPTATION



# Improving Teamwork

- Use standardized briefings
- Employ appropriate assertiveness
- Establish critical language
- Maintain situational awareness
- Debrief

# Simulation Training

**Table 1** A summary of simulation based training in high risk industries

Simulation type	Teamwork competencies	Primary strengths	Primary weaknesses
Case studies/role plays	Knowledge, attitudes	Low cost, positive trainee reactions	Few opportunities for skills practice
Part task trainers	Knowledge, skills	Low cost, distraction free environment	No opportunity for dual task practice
Full mission simulations	Knowledge, skills	Can simulate rare (but critical) tasks in a safe environment	High cost, currently limited to a few medical specialties

# Summary

- High reliability organizations create a culture of safety
- Highly reliable teams display situational awareness, open communication, and anticipatory response

# Summary

- Human factors engineering promotes safety by designing layers of defense within a system
- Teamwork skills can be trained in a simulated environment