# Organizational Learning in Hospitals: Frequent Opportunities, Pervasive Barriers

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#### **Organizational Learning**

Organizational learning is a process of improving organizational action by developing better knowledge and understanding.

Examples:

total quality management in an assembly plant improvements in anesthesia in the past 20 years collaborating to improve OR management practices

#### **Overview**

- Why do hospitals need to learn?
- Why is it challenging?
  - It's not safe
  - You're Swimming upstream
- Organizing to learn
  - What leaders must do to promote organizational learning
  - To what extent are the OR Managers learning organizations?

#### **Current Challenges in Health Care Delivery**

#### **Knowledge** explosion

- 30,000 new references in Medline each month
- Articles published/year from randomized control trials:
  - 100 in 1966 Over 10,000 in 1995

#### • FDA activity

Over 5,000 device applications per year

In 2002: approved 78 new drugs, 17 new molecular entities, 152 new uses for already approved drugs and 321 generic equivalents

#### **Current Challenges in Health Care Delivery**

#### **Increasing specialization and interdependence**

- Ratio of *physicians* to *non-physician care providers* 1900: 1 to 3
  - 2000: 1 to 16
- Number of Boarded Medical Specialties 1927: 2 2000: 124

# **Implications of Trends**

# Individual caregivers must learn continually <u>and</u> teams of caregivers must learn



Need for *collective learning* 

Hospitals must learn <u>as organizations</u> for patient care to be safe and high quality

#### **Challenges to Organizational Learning in Healthcare**

#### **High stakes**

- Human life at risk
- Outcomes are uncertain
- It's difficult to attempt change if change may cause harm

#### Complexity

- Dynamic nature of knowledge
- Variability of inputs (patients)
- Variability of processes (treatments)
- It's often difficult to describe the process... let alone improve it!

#### **Entrenched status hierarchy**

- Across professions
- Across physician sub-specialties
- Collaboration and teamwork for learning is challenging when facing a history of division

# It's Not Safe

#### Where would you choose to be admitted?

Work unit	Error rate
Memorial 1	23.68*
University 1	17.23
University 3	13.19
Memorial 2	11.02
Memorial 4	8.6
Memorial 5	10.31
University 2	9.37
Memorial 3	2.34

\* preventable and potential adverse drug events (ADEs) per 1000 patient-days

#### **Different Reporting Climates**

Quotes from nurses in units where few errors were reported

- "She treats you as guilty if you make a mistake... I was called into her office and made to feel like a two year old."
- "She gives you the silent treatment."
- "You get put on trial..."
- "People get blamed for mistakes... you don't want to have made them."

Quotes from nurses in units where more errors were reported

- "Nurses are too hard on themselves... they are harder on themselves than I would ever be." (nurse manager)
- "Mistakes [in this unit] are serious, because of the toxicity of the drugs—so you're never afraid to tell the nurse manager."

From: Edmondson, A. (1996). Learning from mistakes is easier said than done: Group and organizational influences on the detection and correction of human error. Journal of Applied Behavioral Science, (32) 1. 5-28.



EXCELLENT. THAT'S FOUR GOOD GUYS FOR IT AND TWO BAD GUYS AGAINST IT

### **Managing Interpersonal Risk**

#### Facing risk of appearing:

Ignorant Incompetent Intrusive Negative You can solve this easily by: Not asking questions Not admitting mistakes Not double checking others' work Not criticizing others' actions or questioning current organizational systems

Or you can work to create a climate in which interpersonal risk is minimized by psychological safety .... so that errors and problems can be identified and analyzed for organizational learning

#### Status and Psychological Safety in the ICU

GLM Contrast Comparing Psychological Safety of

- Physicians to Nurses: p<.001</li>
- Nurses to Therapists: p=.016
- Overall planned
   contrast: p = <.001</li>



#### Effects on psychological safety of status varies by unit



## Psychological Safety is Easier to Destroy than to Create

Time honored strategies for destroying psychological safety :

- Make sure the boss criticizes others' ideas
- Spread rumors about people being punished for well-intentioned mistakes
- Only welcome input from experts
- Put people down for being different
- Shoot messengers

Creating psychological safety in the NICU or OR:

- Inclusive leadership
  - Accessible
  - Actively invites input
  - Models fallibility

# **Swimming Upstream**

#### **Do Hospitals Learn from Problems?**

Research question: How do Nurses Solve Problems in Hospitals?

- 239 hours of detailed observation of nurses by HBS doctoral student Anita Tucker
- Nine hospitals (selected for excellence), 26 nurses

#### Nurses are well aware of the *problems* they encounter

- Problems are obvious and frustrating
- About a problem an hour

#### Two qualitatively distinct responses

- First order problem solving Does what it takes to continue patient care
  - Does what it takes to continue patient cure
- Second order problem solving

Does what it takes to continue patient care AND undertakes effort to alert others and/or identify and correct causes of problem

Only 4% of problems are responded to with second order problem solving Why?

#### Why Is First-order Problem Solving Dominant?

Drivers Efficiency Professional Norms Empowerment

Reinforcers Efficacy Gratification

## Gratification from work-arounds

"Working around problems is just part of my job. By being able to get IV bags or whatever else I need, it enables me to do my job and have a positive impact on a person's life – like being able to get them clean linen. And I am the kind of person who does not just get one set of linen, I will bring back several for the other nurses."

- Oncology floor nurse

#### **Unintended Consequences**

#### 1. Work-arounds take time

- an average of 33 min per shift
- (compare with 45 min unpaid overtime)
- 2. Likelihood that the organization "learns" from the problems is low
  - Efficacy of first order problem solving proves elusive in the long run
- 3. Burnout

#### **Burnout from work-arounds**

"I put my heart and soul into my role as a nurse and my reward is patent satisfaction. Therefore I would never quit my job. I do feel that sometimes I am working with one hand tied behind my back. Tied by lack of equipment, supplies and auxiliary help. My job is physically demanding, so much so I don't know how I will be able to continue until retirement."

# Levers Fostering A Second-Order Problem Solving Response

- 1. Management Support
- 2. Psychological Safety
- 3. Organization Responsiveness

# **Rethinking the ideal employee**

When the employee faces:	Ideal employee behavior
Problems/Small Failures	Adjusts and improvises without bothering managers or others
Others' mistakes	Seamlessly corrects for errors – without confronting others about their error
Own mistakes or problems	Allows impression that s/he never makes mistakes
Subtle opportunities for improvement	Remains committed to organization and to its processes – understands the "way things work" around here



# The "ideal employee" inhibits organizational learning

When the employee faces:	Ideal employee behavior	The observant questioner
Problems/Small Failures	Adjusts and improvises without bothering manager	<i>Noisy complainer</i> : Remedies immediate situation but also lets managers and those from whom supplies are received know when the
Others' mistakes	Seamlessly corrects for errors of others – without confronting the person about their error	system has failed. <i>Nosy interrupter</i> : Asks what others are doing and lets others know they have made a mistake with the intent of creating learning not blame
Own mistakes or problems	Allows impression that s/he never makes mistakes	<i>Self-aware error-maker</i> : Lets people know s/he has made a mistake so everyone can learn. Communicates
Subtle opportunities for		openness to hearing about the errors discovered by others.
improvement	Remains committed to organization & its processes – understands the "way things work" around here	<i>Disruptive questioner who wont let</i> <i>well enough alone</i> : Questions "why do we do things this way? Is there a better way of providing this service?"

# **Recovery Windows**

#### The foam did it... the institution allowed it.

US Air Force Brig. Gen. Duane Deal, Member of the Columbia Accident Investigation Board (CAIB)

#### What is a Recovery Window?

A period between an emergent <u>threat</u> (a small failure) and a potential <u>adverse outcome</u> (a large failure) during which <u>preventive action</u> is feasible

A transient opportunity for intense organizational learning

Some threats are clear; some are ambiguous

• Apollo 13 versus Columbia Shuttle

#### **Ambiguous Threats**

... a signal that may or may not indicate that the system is at risk of an adverse outcome

"We didn't see it coming..."

#### Examples

- Vioxx and heart disease
- Firestone tires and Ford Explorers

Ambiguous threats pose a particular challenge to organizational learning

#### **Columbia's Recovery Window**



# **Columbia's Recovery Window**

Launch Day	<ul> <li>Foam strikes Columbia 82 seconds into ascent.</li> </ul>
Flight Day 1	<ul> <li>Mission Management Team (MMT) learns about foam strike</li> <li>Senior managers affirm longstanding belief – not dangerous</li> <li>Concerned engineers form Debris Assessment Team (DAT)</li> <li>First of three requests for additional imagery</li> </ul>
Flight Day 5	<ul> <li>MMT leader Linda Ham: the foam strike is "not really a factor because there is not much we can about it."</li> </ul>
Flight Day 6	Imagery requests cancelled
Flight Day 8	<ul> <li>Without imagery, DAT relies on computer models for analysis</li> <li>DAT can't prove strike is unsafe; concludes no safety of flight risk</li> <li>Findings summarized by mid-level manager in key MMT meeting</li> </ul>
Flight Day 16	Columbia burns up upon re-entry.

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# Most Organizations Downplay Ambiguous Threats

- This under-responsiveness at NASA can be characterized by:
  - Active discounting of risk
  - Fragmented, largely discipline-based analysis
  - Wait-and-see orientation to action

<u>One perspective:</u> NASA's response to the foam strike demonstrates irresponsible or incompetent management

- <u>Alternative view</u>: Under-responsiveness to ambiguous threats represents a natural pattern of behavior in organizations
- Response pattern driven by three factors:
  - Human cognition
  - Team design and climate
  - Organizational structure and culture

#### Why did NASA downplay the threat?



#### **Cognition: Shared Frames**

Frames: mental structures – tacit beliefs and assumptions - that simplify and guide people's understanding of a complex reality

NASA's framing of the shuttle program: <u>production (fully operational)</u> vs. <u>developmental/experimental (R&D)</u>

- *"[the shuttle] will revolutionize transportation into near space, by routinizing it" (President Nixon, 1972)*
- *NASA's promise of 50 flights per year to generate revenues sufficient to cover program costs*
- Language system: "shuttles and payloads"
- "Beginning with the next flight, the Columbia and her sister ships will be fully operational" (President Reagan, after 4<sup>th</sup> successful shuttle mission in 1982)



Production frames are not "bad" -- they are only problematic when the underlying state of knowledge/technology is not well-developed.

### **Team Climate**

The interpersonal climate at NASA did not foster the sharing of "bad news" or the expression of dissenting views

Rodney Rocha (Debris Assessment Team co-chair):

- Does not speak up during MMT meetings; chooses not to send scathing e-mail
- "I couldn't do it [speak up more forcefully]... I'm too low down... and she's [Ham] way up here." (Source: ABC News)

Former shuttle astronaut James Bagian:

• "At senior levels, during the 1990s, dissent was not tolerated, and therefore, people learned if you wanted to survive in the organization, you had to keep your mouth shut."

# **Team Climate**

Investigator:	As a manager, how do you seek out dissenting opinions?	
MMT Chair:	Well, when I hear about them.	
Investigator:	By their very nature you may not hear about them.	
MMT Chair:	Well, when somebody comes forward and tells me about them.	
Investigator:	But, what techniques do you use to <i>get</i> them?	
Apparently, the MMT Chair offered no response to this final question.		
RCE: Langewiesche, Atlantic Monthly, Nov	Passive leadership is a substantial barrier to candid	

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#### **Organizational Structure**



# Confirmatory vs. Exploratory Response Modes

	Confirmatory Response	Exploratory Response
Presumed state of knowledge	Complete, certain, and precise	Bounded, ambiguous, and imprecise
Tacit framing of the work	Performance orientation	Learning orientation
Norms regarding conflict and dissent	Strong pressures for conformity	Active seeking of dissenting views
Leadership of the problem- solving process	Fragmented and decentralized; Directive on content, but not process	Centralized and coordinated; Directive on process, not content

Leaders can work to build in an exploratory response as part of the organization's repertoire.

# **Organizing to Learn**

# Q: How do you become a learning organization?

(a) You declare yourself a learning organization

#### (b) You humbly embark on a long journey of

building collective learning capabilities, identifying performance and opportunity gaps, & systematically tracking results...

# The Leader's Job

## **Leadership** that inspires and creates shared urgency for learning

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**Environment: Building a climate of psychological** safety

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**Process:** Empowering a team-based infrastructure for experimentation, problem solving, and improvement

#### Julie Morath & Children's Hospital

#### Leadership: Creating shared urgency

- A compelling vision: 100% patient safety
- The power of inquiry

#### Learning Environment: Building psychological safety

- Institute "blamefree reporting"
- Anticipate the "better before worse" effect

Processes: Empowering a team-based learning infrastructure

- Patient Safety Steering Committee
- Safety action teams
- Good catch logs

# **OR Managers' Data**

#### **OR Managers: Learning Environment**



#### **OR Managers: Learning Processes**



# **OR Managers: Objectives**



#### **OR Managers: Category Scores**



# Comparisons between OR Managers and World Bank

# **Learning Environment**



# **Learning Processes**



# Leadership



# **Objectives**



# **Category Scores**



# Comparisons between OR Managers, World Bank and WildLand Fire Community work units

# **Learning Environment**



# **Learning Processes**



# Leadership



# **Objectives**



# **Category Scores**



## **Automatic Frames**

#### Similarity assumption

• The tendency to view new situations as overly similar to those encountered before

#### Overconfidence

• A tacit belief that my view of the situation is the accurate view

#### Discounting others' views

• A tacit belief that others' views are less valid than mine

#### The "fundamental attribution error"

• Automatic causal reasoning in which others' shortcomings have internal causes (intention, ability, personality) while one's own failures have external causes (the situation, constraints)

> All present significant barriers to collective learning... but can be overcome by effective leadership

#### Leading the Learning Organization

Tell yourself that [the current project] is different from anything you've done before and presents an exciting and challenging opportunity to try out new approaches and learn from them

See yourself as vitally important to a successful outcome and, yet, as unable to achieve it alone – without the willing participation of other

Tell yourself that others (who are vitally important to a successful outcome) may bring key pieces of the puzzle that you don't anticipate in advance

Communicate with others exactly as you would if the above three statements were in fact true

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