Safety culture
1. Purpose of safety culture

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Aviation and Healthcare: what's in common?

Situation

December 28, 1978
United Airlines Flight 173, USA

- Scheduled flight from Denver to Portland
- Experienced team
- Unexpected problem (the landing gear may not have been fixed)
- Landing has been delayed to clarify the situation
- Running out of fuel
- The flight engineer tries to warn the captain about decreasing fuel reserves
- The commander is focused on the landing gear problem
- The commander is an unquestionable authority
- The commander wrongly estimates the fuel consumption and the amount of time remaining
- Engine loss due to lack of fuel
- Stopping all engines
- Plane crash
- 8 passengers and 2 crew members are killed

March 29, 2005
Patient Elayne Bromiley (37 years old), USA

- Elective endoscopic sinus surgery
- Experienced team
- Unexpected problem (jaw muscles cramped, not possible to insert a laryngeal mask)
- Blood oxygen levels drop
- Tracheal intubation failure
- The nurse prepares a set for tracheotomy and notifies the doctors about her readiness
- The doctors focus on tracheal intubation
- The doctor is an unquestionable authority
- The doctors wrongly estimate the patient condition and the amount of time remaining
- Hypoxia for 20 minutes
- Permanent brain damage
- Coma
- The patient is dead

Cause

United Airlines Flight 173

Unusual situation

Human error

Patient Elayne Bromiley

Unusual situation

Human error

Consequences

United Airlines Flight 173

- Independent investigation
- Black Boxes – collecting detailed information
- The investigation report is available to everyone
- Airlines are legally responsible for implementing the report's recommendations

- "The Safety Board believes that this accident exemplifies a recurring problem a breakdown in cockpit management and teamwork during a situation involving malfunctions of aircraft systems in flight."

- Recommendations: Implement the principles of rational resource management at the level of airship crews, with a particular focus on the benefits of involving other crew members in decision-making (for commanders) and training self-confidence (for other crew members).

Patient Elayne Bromili

Attending physician – to the patient's husband:

"We had problems with anesthesia. They were impossible to predict. Sometimes this happens. We don't know why. The anesthesiologists did their best, but nothing worked. This is a rare case. I'm really sorry."

https://www.ntsb.gov/investigations/AccidentReports/Reports/AAR7907.pdf

Effects

Aviation	Medicine
Risk of dying in a plane crash: ~ 1:10 million	Risk of medical error during treatment in the clinic: 1:10 Risk of death due to medical error: 1:300

Liam Donaldson,
Chair of the World Alliance for Patient Safety, WHO

Why?

Aviation	Medicine
Complex system: interaction of people and processes	Complex system: interaction of people and processes
High technology, rapid development of the industry	High technology, rapid development of the industry
Human factor: decision making	Human factor: decision making
The cost of human error is very high	The cost of human error is very high
Strict hierarchy	Strict hierarchy

Why?

Aviation: the right to make mistakes	Medicine: the God complex
Failure is an integral part of any development process	Failure is an accident, which casts a shadow on the one who allowed it
Each mistake is studied, and what is learned from it is shared with everyone involved.	Mistakes are hidden and punished for, and work continues as if they could never happen again.
If a pilot makes a non-fatal error and reports it within 10 days, they will not be punished.	If a doctor makes a mistake, they are seen as incompetent.
A constantly updated database of information about bottlenecks and risky patterns.	"It was just a small error – it happens. The patients wouldn't understand, so they don't need to know."

The difference is in the professional culture

Crash analysis of United Airlines 173 was a key milestone in the history of aviation safety

"Issue an operations bulletin to all air carrier operations inspectors directing them to urge their assigned operators to ensure that their flightcrews are indoctrinated in principles of flight deck resource management, **with particular emphasis on the merits of participative management for captains and assertiveness training for other cockpit crewmembers**. (Class II, Priority Action, X-79-17)"

This is the safety culture

How it works

Training flight C1

Lieutenant Colonel, super-experienced pilot

“You should be prepared to tell me if you think, feel, or intuitively believe that something is wrong.”

Trainee, 18 years old, first flight

“I'm from Generation X, if you give me permission, I will.”

- The trainee suggested that the plane's altitude was reported incorrectly
- An experienced pilot believed and checked
- This prevented a collision with Boeing A 747 carrying 350 passengers

Can the young staff correct the experienced ones in your hospital?

Safety culture

An atmosphere where employees at any level act as if no one is really checking their commitment to safety

- A work environment that supports open communication
- Collaboration regardless of position or status
- Encourage open discussion of mistakes to learn from them
- Interest of all employees (and first of all management) in solving problems
- No scapegoats

Components of safety culture

Just culture

- Staff are not blamed for system problems they cannot control.
- They feel safe reporting mistakes and asking for help when something is beyond their skills.
- **Important**: Not being responsible for system failures does not mean staff can act unethically or unprofessionally.

Reporting culture

- A culture where people feel safe to report issues without fear of blame.
- Staff report not only incidents that harm patients, but also their own mistakes and any unsafe situations.

Learning culture

- A workplace that actively supports and promotes learning for everyone – both staff and the organization itself.
- Gaining and sharing knowledge is treated as important, recognized, and rewarded.

Why do we need safety culture?

For employees:

- Easier work: shared responsibility.
- More comfortable work: openness, a flat structure.
- More interesting work: exchanging experience with colleagues.

For the organization:

- Growth: A team of motivated people, not stressed bosses and passive employees.
- Reputation: Malpractice lawsuits happen less often when doctors are honest with patients.
- Resilience: You can’t write rules for every unusual situation. In a crisis, proactive people are the most important resource.

For leadership:

- Changing the mindset
- Abandoning the usual patterns of behavior
- Refusal to be "bossy"
- Discomfort and vulnerability to criticism

The God complex vs. complex system

- Hospital is a complex system
- Complex system consists not only of people and processes, but also of interactions between them
- Complex system cannot work perfectly
- A single person cannot ensure the system functions properly
- A leader's job is to keep the system running smoothly, knowing that no single person can work perfectly all the time

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