Promoting a Culture of Safety

Systems Thinking and Cause Analysis

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Promoting a Culture of Safety

Learning Objectives

- The evolution of Patient Safety
- Identifying and reporting safety events
- Systems Thinking and Cause Analysis

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Section 1

The Advancement of Patient Safety in the 21st Century

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To Err is Human……

- 98,000 patients die in the US each year due to problems related to their care (IOM, 2000)
- 42.7 million adverse events occur globally each year (Jha et al., 2013)
- 1 in 10 patients develops an adverse event such as a health-care acquired infection, fall, preventable adverse drug event, pressure ulcer, etc. (Weiss et al., 2014)
- >12 million patients experience a diagnostic error; half of these have the potential to cause harm (Singh et al., 2014)

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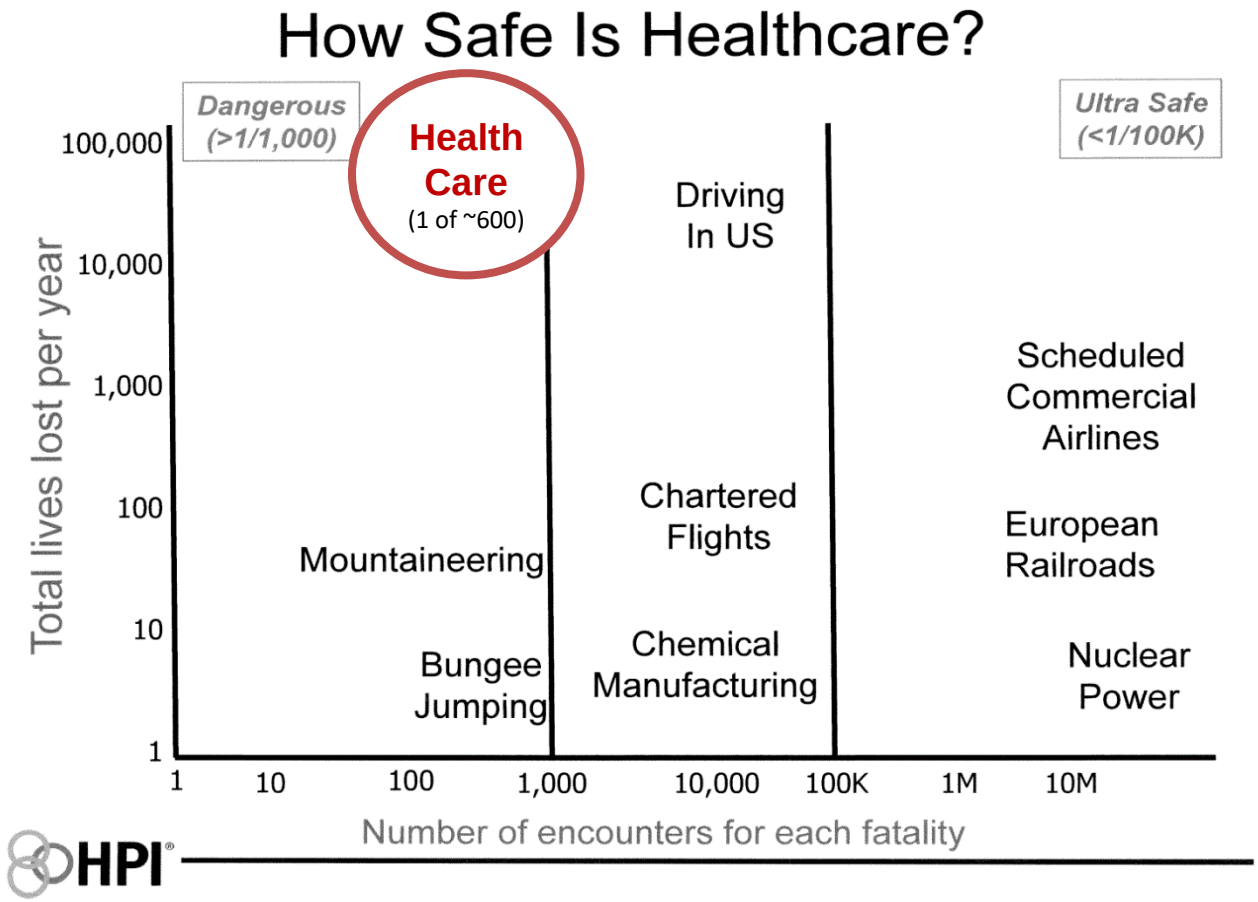
Healthcare has much room for improvement



Key Actions by select organizations to the IOM report

- The Joint Commission initiates National Patient Safety Goals
- National Quality Foundation lists “Never Events”
- Congress passes the Quality and Patient Safety Act in 2005
- Healthcare organizations turn to other industries for guidance in designing High Reliability strategies



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Key Requirements for Promoting a Culture of Safety

1. Classify Safety Events using a Common Format
2. Report Safety Events including “Near Misses”
3. Adhere to a “Fair and Just Culture” approach
4. Promote High Reliability leader methods and error-prevention behaviors

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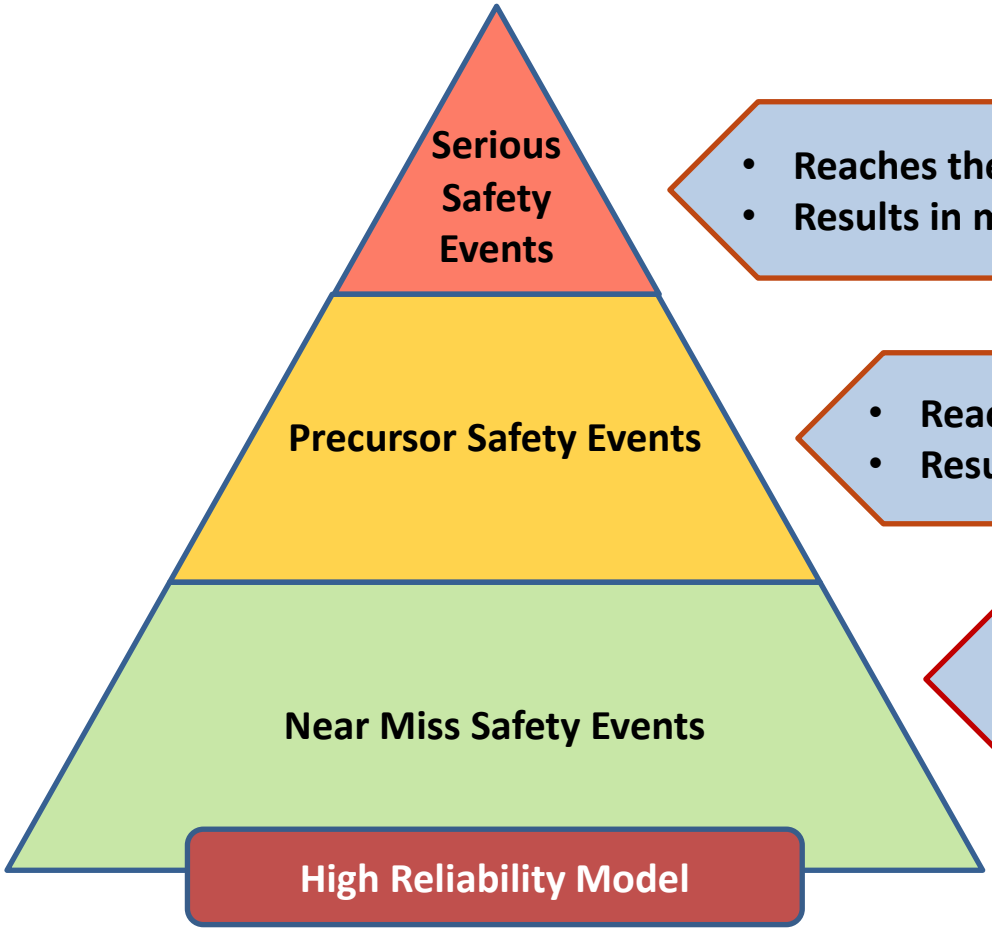
Classification of PATIENT SAFETY EVENTS



- Reaches the patient *and*
- Results in moderate to severe harm or death

- Reaches the patient *and*
- Results in minimal or no detectable harm

- Does not reach the patient
- Error is caught by detection or by chance

The goal is to reduce the severity of safety events by **increasing** the reporting of all events. The more event reports we have, and the better the data contained within those reports, the more likely we are to identify and correct process issues before they result in serious harm.

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FAIR & JUST CULTURE

Not Individuals or Systems, but Individuals in Systems

- See human error as a *symptom,* not a *cause*
- Identify and correct failures, weakness, and flaws in:
  - Processes, protocols
  - Environmental design and hazards
  - Equipment design, availability, and effectiveness
  - Usefulness of Policies and Procedures
  - Production pressures
  - Goal conflicts
- Adhere to a Non-Punitive approach to human error

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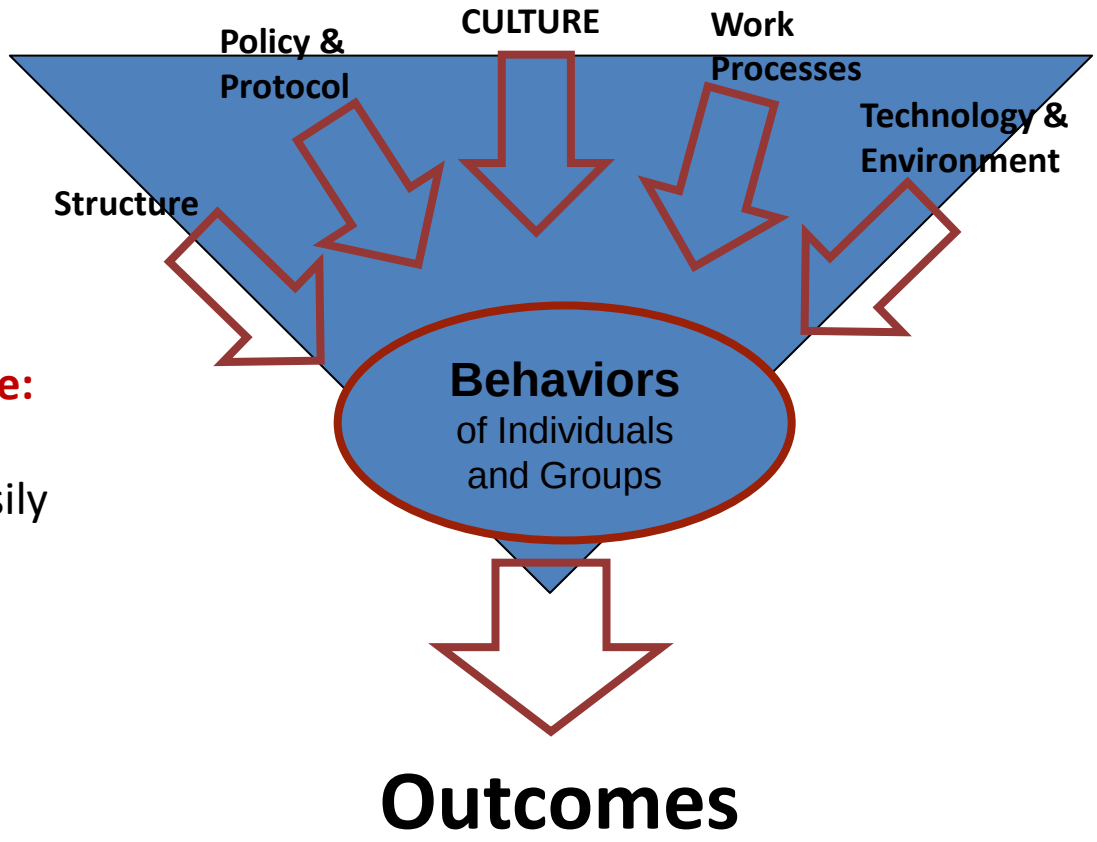
Safety at the SHARP END

Sources: Press Ganey-HPI, 2017; Flin et al., *Safety at the Sharp End, 2008.*

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

W. Edwards Deming



Make sure systems and processes are:

- Part of the CULTURE.
- Clear, easy to understand, and easily accessible.
- Consistently followed.
- Reviewed and improved regularly.

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High Reliability Organizations

- **Definition:**

  Performing as intended, consistently, over time

- **Application:**
  - Highly complex organizations with potential for catastrophic consequences (e.g. Nuclear Power, Railroads, Commercial Airlines, Construction, NASA)
  - Approximately 1100 healthcare systems across the U.S.

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Section 2

Identifying and reporting safety events

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“Measuring” Patient Safety

1. **Determine frequency and severity of Safety Events**
   - ❑ Event types and categories
   - ❑ Significance or Level of harm
   - ❑ Serious Safety Event Rate
   - ❑ Number of days since last Serious Safety Event
   - ❑ Placement on SAFER™ matrix (to determine severity and frequency priorities)

2. **Determine causes of these events** (using a ***Systems Thinking*** approach)
   - ❑ Root Cause of Serious Safety Events
   - ❑ Common and Apparent Causes
   - ❑ Latent factors that led to the event

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What should be reported?

- ❑ Any departure from generally accepted practices or processes.
- ❑ Mistakes / human errors that involve patient care or safety concerns.
- ❑ Near Misses

  Any departure / human error that has the potential to cause harm if it reaches a patient or staff member.

- ❑ Any failure in the *Known Complications Test*[1]*:*
  1. *Was the complication a known risk and were steps taken to mitigate it?*
  2. *Was the complication identified in a timely manner?*
  3. *Was the complication appropriately treated in a timely manner?*

Sources: ASHRM, 2012; Healthcare Performance Improvement, LLC. 2009.

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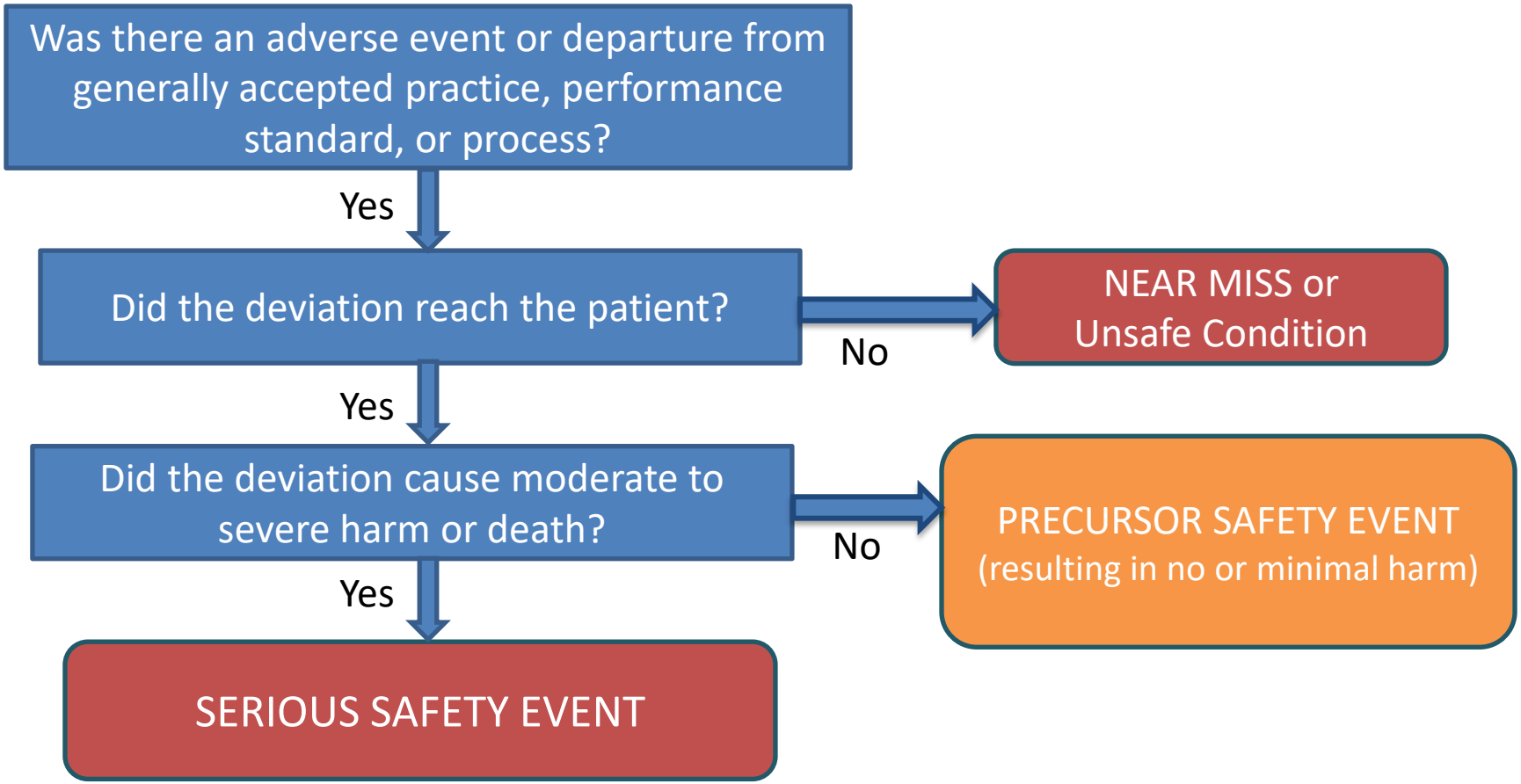
Safety Event Decision Algorithm*



*Source: Healthcare Performance Improvement, LLC. 2011.

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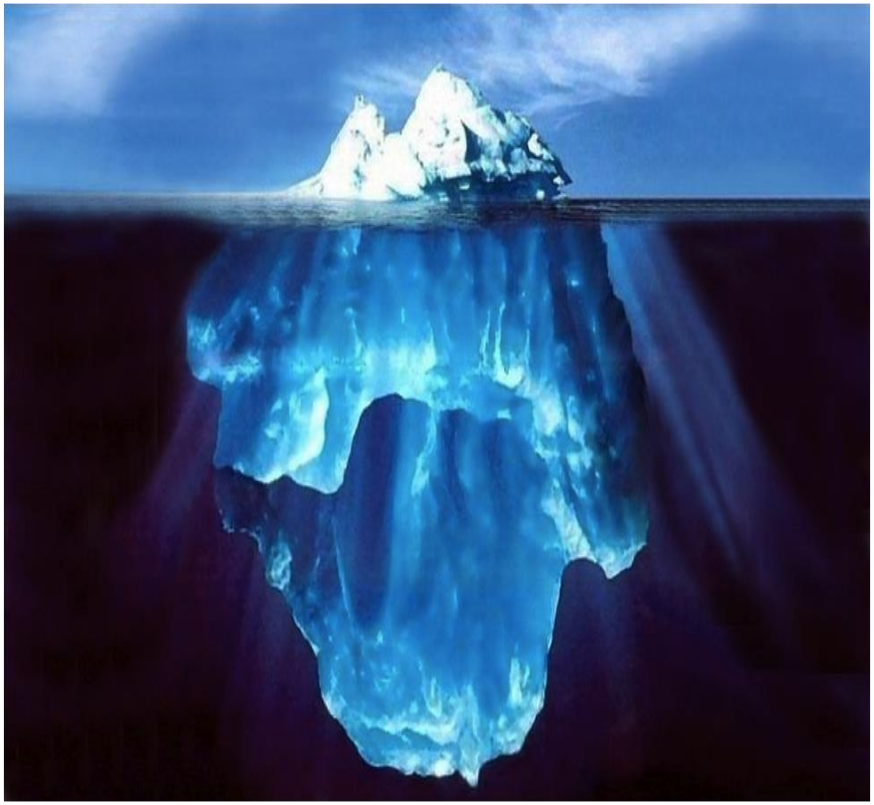
We NEED to KNOW what patients and families say about us……



It may seem counter-intuitive, but capturing patient / family feedback is important to help us know what we need to improve.

There may be many more similar issues that we don't know about because they are not shared.

Knowing what makes patients and families unhappy help us improve the Patient / Family Experience.

Use the RDE Patient Relations module for reporting Feedback shared by patients and families:

- Compliments
- Suggestions
- Complaints
- Grievances

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The importance of robust data analysis…

The following data elements are required to help us respond to Safety Events:

- Significance (to determine the severity of harm)
- Frequency (to identify high frequency events)
- Tracking / trending
- Identifying process improvement needs and priorities
- Reports to leadership
- Follow-up with staff

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Section 3

Systems Thinking and Cause Analysis

Why perform Cause Analysis?

As physicians and leaders, we have an imperative to prevent and detect problems that can lead to a safety event.

We also have a profound obligation to correct causes once an event has occurred.

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September 2006

Adult doses of heparin administered to six babies

November 2007

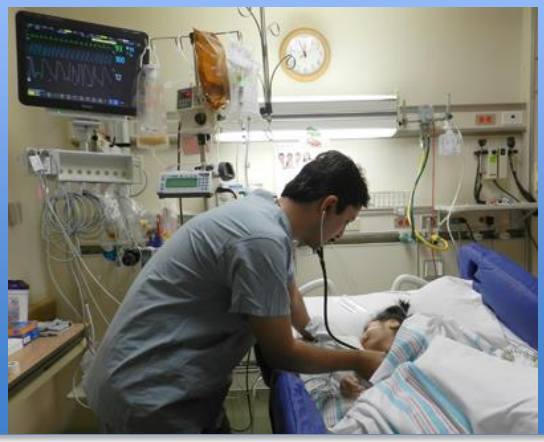
Dennis Quaid's newborn twins given accidental overdose of heparin

July 2008

14 babies in Corpus Christi received concentrated heparin; twins died

March 2010

Toddler dies in Nebraska from Heparin infusion overdose



Déjà Vu – Why Events Keep Happening

1. <u>Serious Events</u>:
   - Real Root Causes were not identified
   - Corrective actions to prevent recurrence did not effectively address the root cause(s) and contributing factors (latent causes).

2. <u>All other Events</u>:
   - Not analyzed or studied
   - Lessons learned were not aggregated
   - Corrective actions were never implemented or sustained
   - Corrective actions were not effective
   - Lessons learned were not shared

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Human Error – A Symptom, NOT A CAUSE

Human Error – by any other name or by any other human – should be the starting point of our investigation, not the conclusion.

Source: HPI-Press Ganey presentation with citation: Fitts, P.M., & Jones, R.E. (1947). Analysis of factors contributing to 460 pilot error experiences in operating aircraft controls. *Memorandum Report TSEAA-694-12,* Aero Medical Laboratory, Air Material Command, Wright-Patterson Air Force Base, Dayton, Ohio.

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Contemporary Influencers of System Thinking

Jens Rasmussen

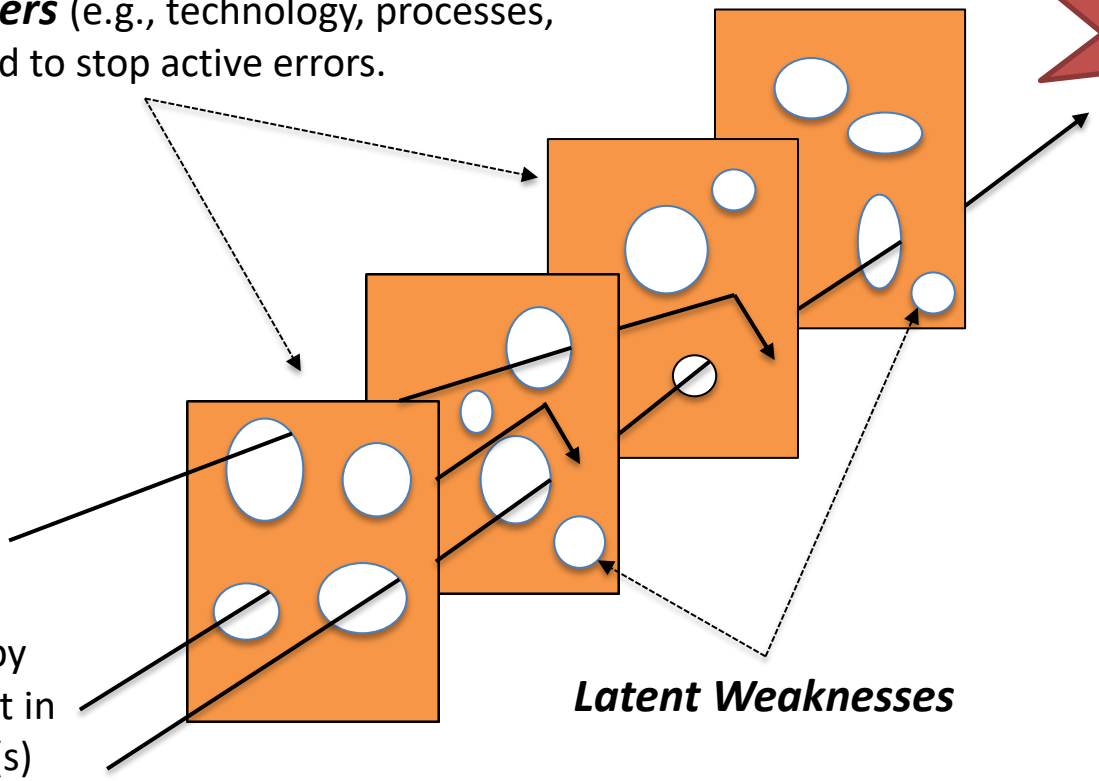
- Defined 3 types of human task performance: Skill-based, Rule-based, and Knowledge-based

James Reason

- Expanded on Rasmussen's Skill-Rule-Knowledge based classification of human performance to define the Generic Error Modeling System
- Coined the term "Sharp End" (referring to the position of persons providing direct care or service)
- Used the Swiss cheese model of causation to depict how errors penetrate through latent weaknesses in system defenses

The Swiss Cheese Model

Multiple Barriers (e.g., technology, processes, people) designed to stop active errors.



Active Errors by individuals result in initiating action(s)

DETECT & CORRECT the System Weaknesses → ***PREVENT ERRORS***

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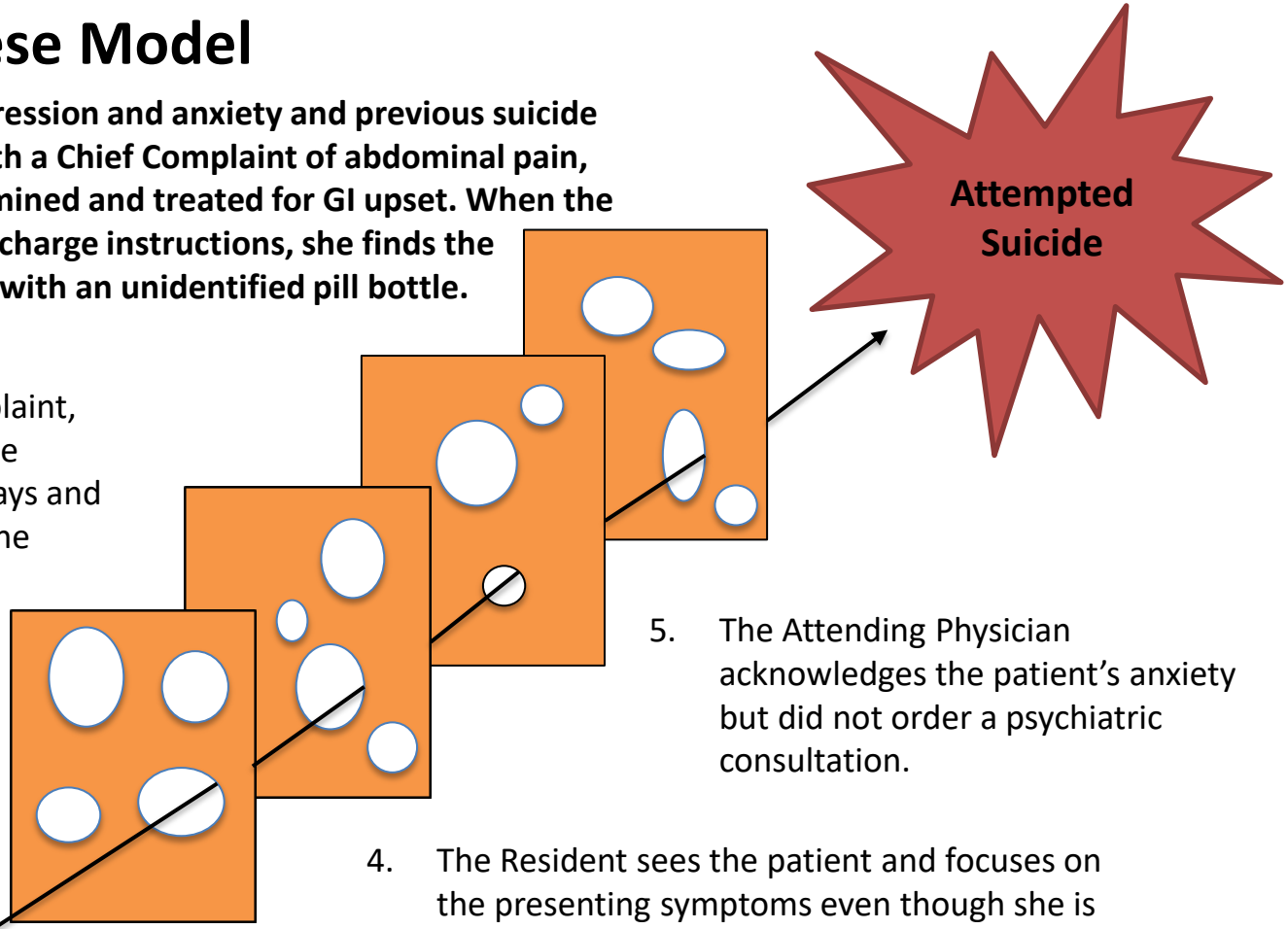
The Swiss Cheese Model

15 y/o with a past history of depression and anxiety and previous suicide attempts is brought to the ED with a Chief Complaint of abdominal pain, nausea, and diarrhea. She is examined and treated for GI upset. When the nurse enters the room to give discharge instructions, she finds the patient on the floor unconscious with an unidentified pill bottle.



1. Triage Nurse notes chief complaint, takes vital signs, and rooms the patient. The ED is busy as always and the nurse skips over most of the screening questions.

2. RN assigned to patient is called away to a Code before she completes the patient's assessment.

3. Hospital Administration is in the process of revising its policy for Direct Observation of patients at risk for suicide and has not yet implemented changes.

4. The Resident sees the patient and focuses on the presenting symptoms even though she is aware of the patient's history and observes her increasing restlessness and agitation.

5. The Attending Physician acknowledges the patient's anxiety but did not order a psychiatric consultation.

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References

AHCA. Quality Improvement. Retrieved from https://www.ahcancal.org/quality_improvement/Pages/default.aspx February 2019.

CMS. Quality Assurance and Performance Improvement. Retrieved from https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/NHQAPI.html February 2019.

Flin, R., O'Connor, P., & Crichton, M. (2008). *Safety at the Sharp End.* Burlington, VT: Ashgate Publishing.

Hoppes, M., Charney, F.J., Mitchell, J.L., Pavkovic, S.D., Sheppard, F., & Venditti, E.G. (2015). *Root Cause Analysis Playbook: An Enterprise Risk Management Approach and Implementation Guide.* Chicago: American Society of Healthcare Risk Management.

Hoppes, M., Mitchell, J.L., Venditti, E.G., & Bunting, R.F. (2012). *Serious Safety Events: Getting to Zero™,* White Paper. American Society for Healthcare Risk Management.

Institute for Healthcare Improvement. How to improve. Retrieved from http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx February 2019.

Institute of Medicine. (2000). *To Err is Human: Building a Safer Health System by Committee on Quality of Health in America.* Boston: Institute for Healthcare Improvement.

Jha, A.K., Larizgoitia, I., Audera-Lopez, C., Prasopa-Plaizier, N., Waters, H., & Bates, D.W. (2013). The global burden of unsafe medical care: Analytic modelling of observational studies. *BMJ Quality and Safety, 23*(7): 741-748.

Press Ganey - Healthcare Performance Improvement, LLC. (2013). *The HPI Cause Analysis Field Guide.* Virginia Beach, VA: HPI.

Hettinger, A.Z., Fairbanks, R.J., Hegde, S., Rackoff, A.S., Wreathall, J., Lewis, V.L., et al. (2013). An evidence-based toolkit for the development of effective and sustainable root cause analysis system solutions. *Journal of Healthcare Risk Management 33*(2): 11-20.

Singh, H., Meyer, A.N.D., & Thomas, E.J. (2014). The frequency of diagnostic errors in outpatient care: Estimations from three large observational studies involving US adult populations. *BMJ Quality and Safety, 23*(9): 727-731.

The Joint Commission. (1998). *Sentinel Events: Evaluating Cause and Planning Improvement.* Oakbrook Terrace, IL: Author.

National Patient Safety Foundation. (2015). *RCA^2: Improving Root Cause Analyses and Actions to Prevent Harm.* Retrieved from www.npsf.org.

Weiss, A.J., Freeman, W.J., Heslin, K.C., & Barrett, M.L. (2014). Adverse drug events in US Hospitals, 2010 versus 2014. Statistical brief #234. Rockville, MD: Agency for Healthcare Research and Quality.

Wilkerson, J. & Price, L. (2016). *Using Lean Six Sigma as a Structure for an Accountable RCA Process.* ECRI PSO webinar retrieved 3/17/16 from www.ecri.org.

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