Multiple Approaches to Identify Medical Errors

Arturo Pinna Pintor Foundation - Torino, Italy

Symposium

From perceived quality to perception of the medical error. Integrated methodology to detect medical errors

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Healthcare Associated Injury/Harm

- An injury or harm to a patient attributed to the process of care rather than underlying physiological conditions

Hazard

- Anything which has the potential to cause harm

Risk

- The likelihood that somebody or something will be harmed by a hazard, multiplied by the severity of the potential harm

Goals of Patient Safety

- Reduce the risk of healthcare associated (caused by treatment) injury/harm to patients
- Remove or minimize hazards which increase risk of healthcare associated injury/harm to patients

An Epidemic

- Healthcare associated injury is an epidemic of world wide proportion
- We should declare war on healthcare associated injury/harm

John Eisenberg, MD Director, AHRQ (September 11, 2000)

- This war needs to be fought as coalition warfare with allies from other countries

Epidemic Stage One

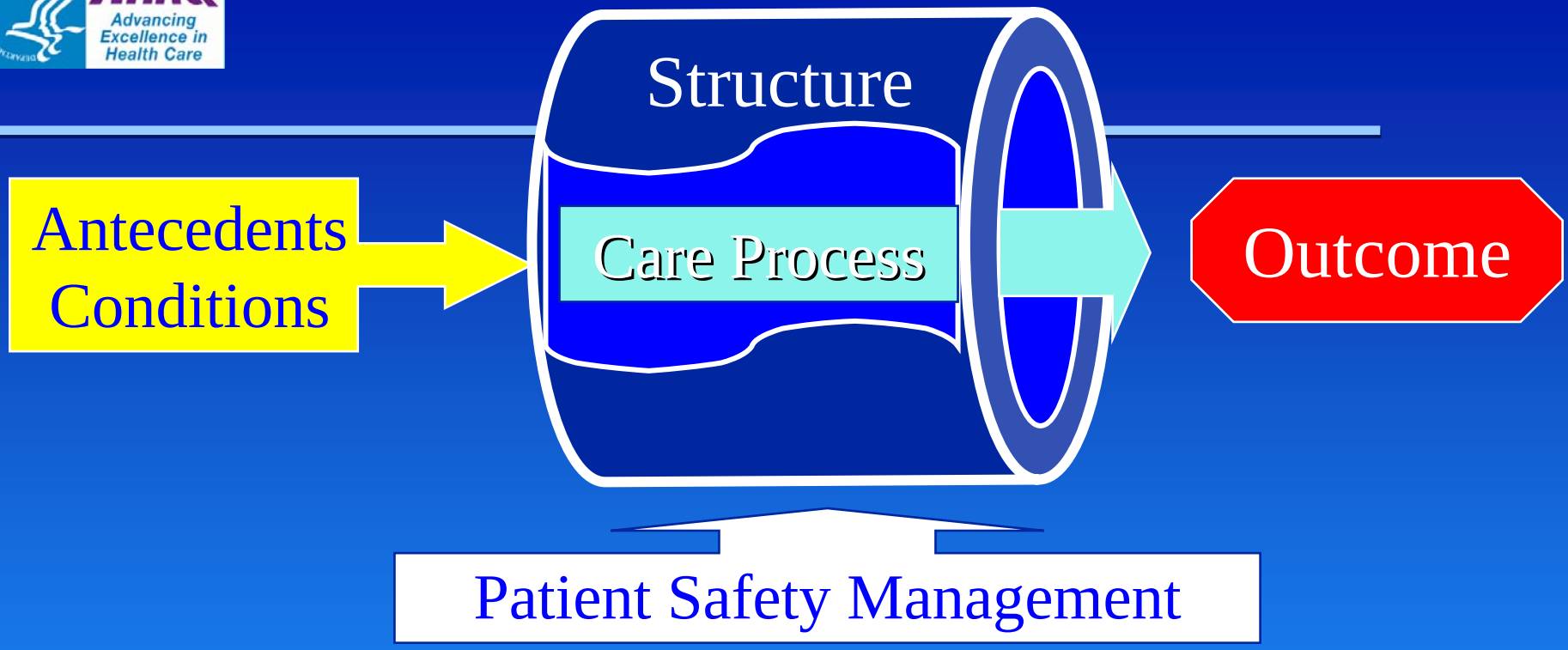
- Identification of risks and hazards that patients at risk for harm or injury from the process of care
- Raise awareness that patients are at risk for iatrogenic injury and harm

Epidemic Stage Two

- Eliminate hazardous conditions, and practices and policies that lead to iatrogenic injury
- Design, test and implement practices and process that eliminate hazards and reduce the risk of healthcare associated injury/harm
- Develop a positive patient safety culture

Epidemic Stage Three

- Maintain vigilance and a constant state of unease
- Maintain a positive safety culture



Adjust structure and process to eliminate or minimize risks and hazards of health care associated injuries before they have an adverse impact on the outcomes of care

Nested Risks and Hazards

Evidence at Stage One Identifying Risks and Hazards

- Issue of evidence
  - Incidence
  - Prevalence
  - Rates
  - Rare events

Identification/Detection

- Multiple sources
  - Spontaneous active event reports
  - Use of patient safety indicators from administrate data
  - Triggers form medical records

Types of Identification Systems

- Event reporting systems
- Patient safety indicators from discharge data

- Triggers from EHR
- Direct Observation
- Videotape

- FMEA
- PRA

Active Spontaneous Event Reporting Systems

Advantage

- Gets sharp end individuals involved
- A viable measure of changes in organizational culture
- Known events - incidents
- Near Miss Events
  - Identify Potential Risk
  - Identify hazards
- Can perform root cause analysis

Disadvantages

- Poor for establishing prevalence – rates
  - Significant under reporting
- Reporter bias
  - Subject to organizational culture issues
  - Not everyone reports

Medical Records & Abstractions

Advantage

- Can determine prevalence
- Record of clinical activity
- Good at identifying documented harm

Disadvantage

- Not everything is documented in the chart
- Time intensive & expensive
- Inter rater reliability issues if looking at error/negligence

Indicators from Discharge Data

Advantage

- Data already available
- Large populations
- Examine state/regional/local trends
- Identify significant problems for further investigation
- Good at establishing prevalence

Disadvantage

- Cannot distinguish error or non preventable harm
- Subject to coding variations
- Provides only indicators of harm
- Requires follow-up studies

Surveillance & Trigger Systems

Advantage

- Excellent at indicators of harm
- Can run in background especially with EMR
- Can be used proactively

Disadvantage

- Works for known harms
- Does not spot rare or unusual events
- Not sensitive to near misses
- Does not engage sharp end personnel very well

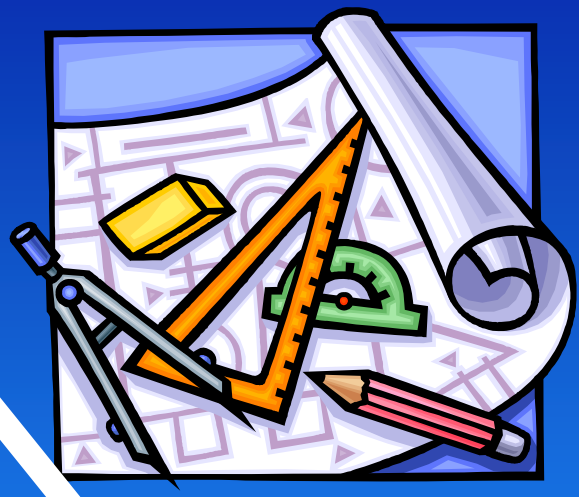
Other Identification Methods

- Direct observation
  - + Rich detail
  - - Investigator limits
- Videotaping
  - + Documents action
  - – Only sees what's in camera's view
- All are useful but time intensive and expensive

Avoiding the Electronic Graveyard

Triangulation with Multiple Methods

Active Event Reporting



Truth?

Passive Indicators Discharge Data

Passive Triggers Medical Records

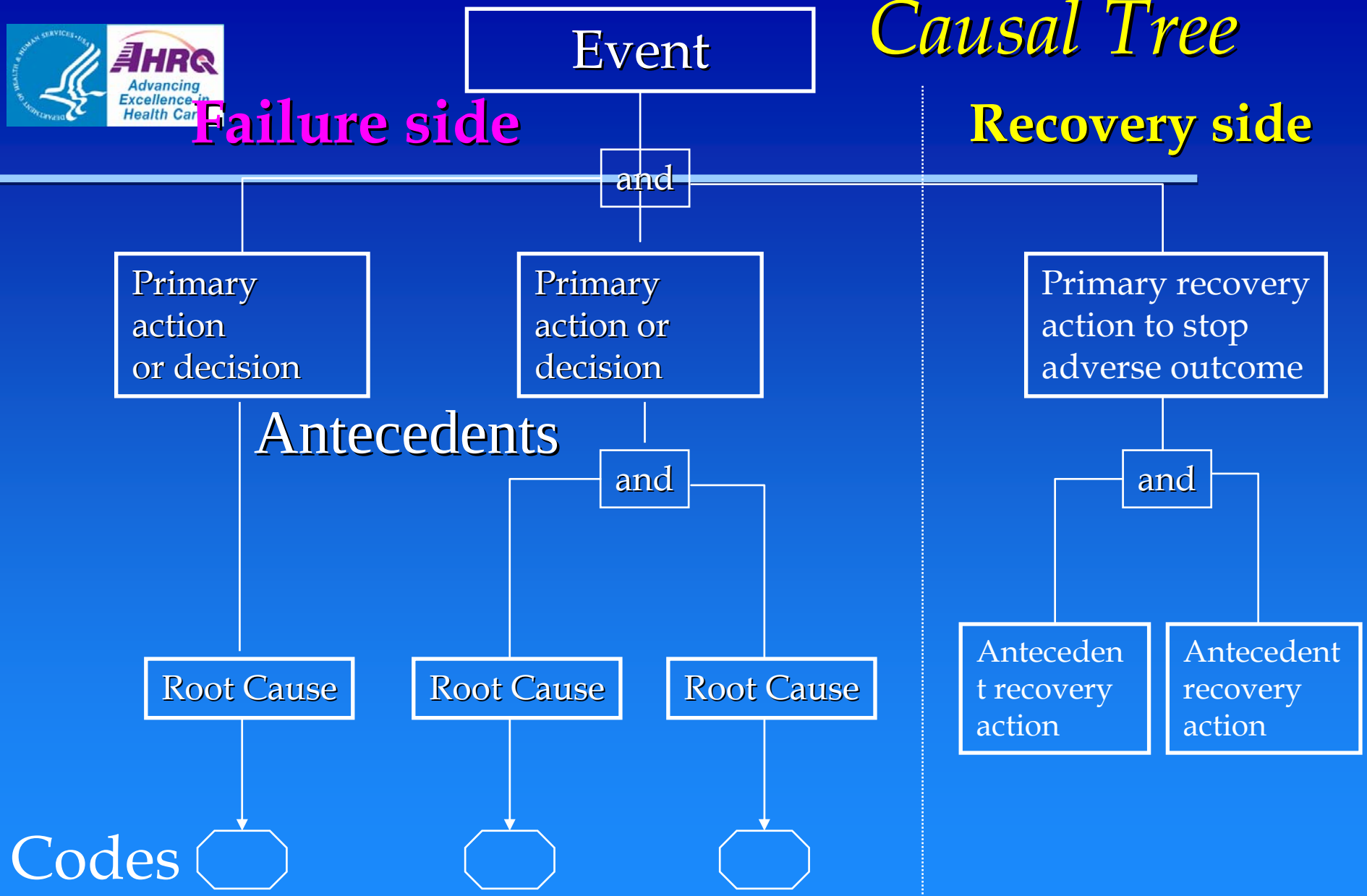
Weick's Sense Making

- Literally making sense of events
- Human ability to retrospectively find patterns in experience to give meaning to events
- To make sense is not to find the "right" or "correct" answer but to find a pattern in events

Sense Making Steps

- Detection of risks and hazards
- Analyzing data – understanding contributing factors – why events occur
- Modeling risk and hazards through proactive risk assessment

Causal Tree

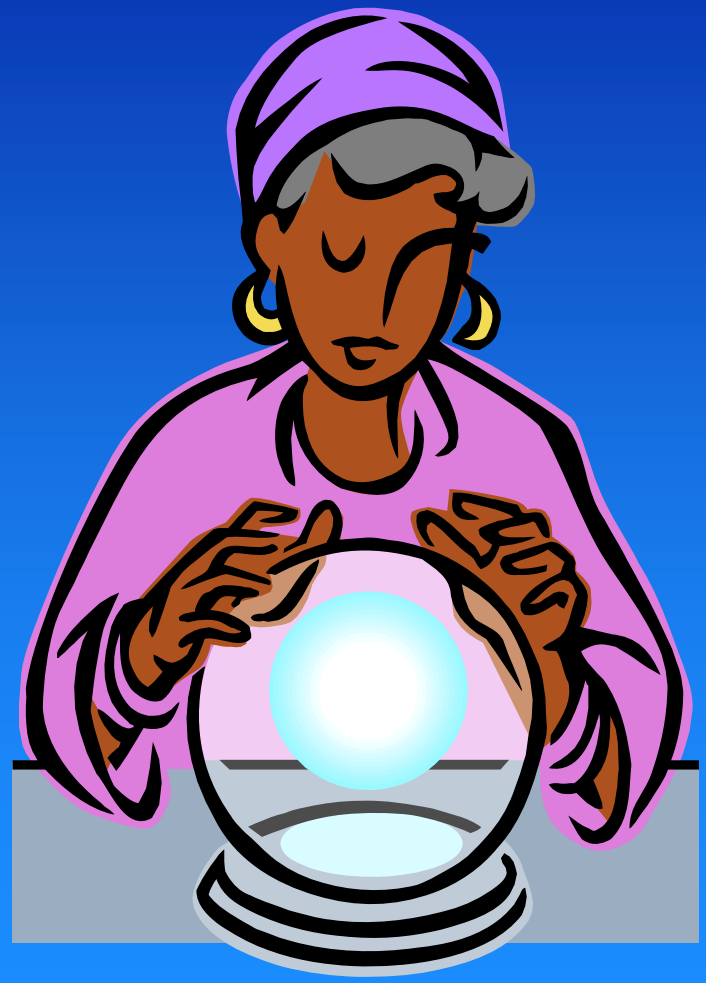

Event
Failure side
Recovery side
and
Primary action or decision
Primary action or decision
Primary recovery action to stop adverse outcome
Antecedents
and
and
Root Cause
Root Cause
Root Cause
Antecedent recovery action
Antecedent recovery action
Codes

Data Mining

- Discover trends
- Identify organizational behavior
- Predict future events
- User control query
- Clusters and fuzzy matching for patterns not readily identifiable
- Similarity at both syntactic and semantic matching

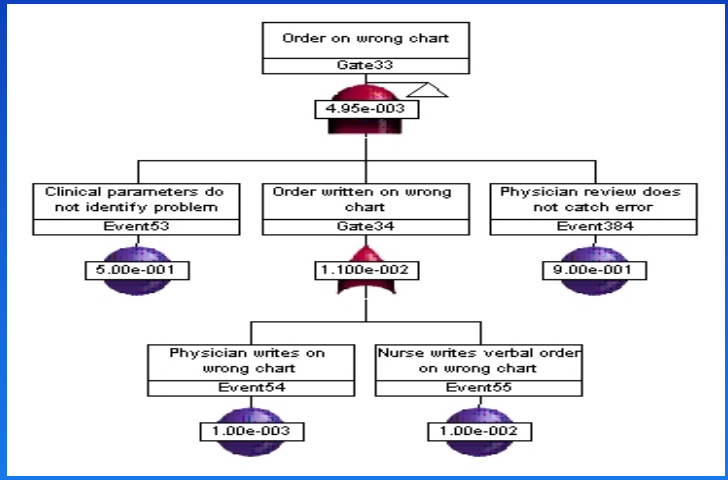
Prospective Risk & Hazard Analysis Tools

- Process Mapping
- Failure Mode & Effect Analysis (FMEA)
- Probabilistic Risk Assessment (PRA)
- Probabilistic Safety Assessment (PSA)
- Scio-Technical Probabilistic Risk Assessment (ST-PRA)



Risk Modeling

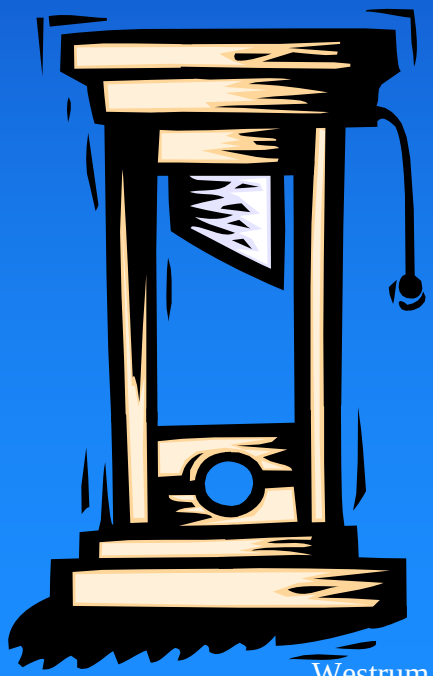
- Visualizes risk
- Sharable
- Ownership of risk
- Identifies high priority areas for action
- Interacts with reporting systems
- Can become a living learning system



Westrum's Organizational Safety Culture Continuum

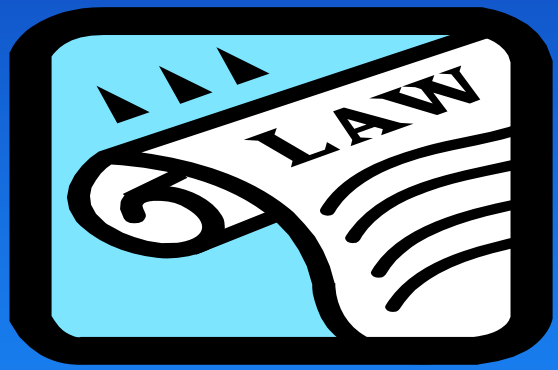
Pathological

Execute the Messenger



Bureaucratic

Follow the rules/law



Generative

A Learning Organization

Westrum Typology of organizational cultures. Qual Saf Health Care 2004; 13(supple II): ii22-ii27.

What you do thunders so loudly I can't hear what you're saying

- Its culture is what an organization does: its practices, procedures, and processes
- Not primarily an emergent property of its beliefs and values.

Culture and Safety

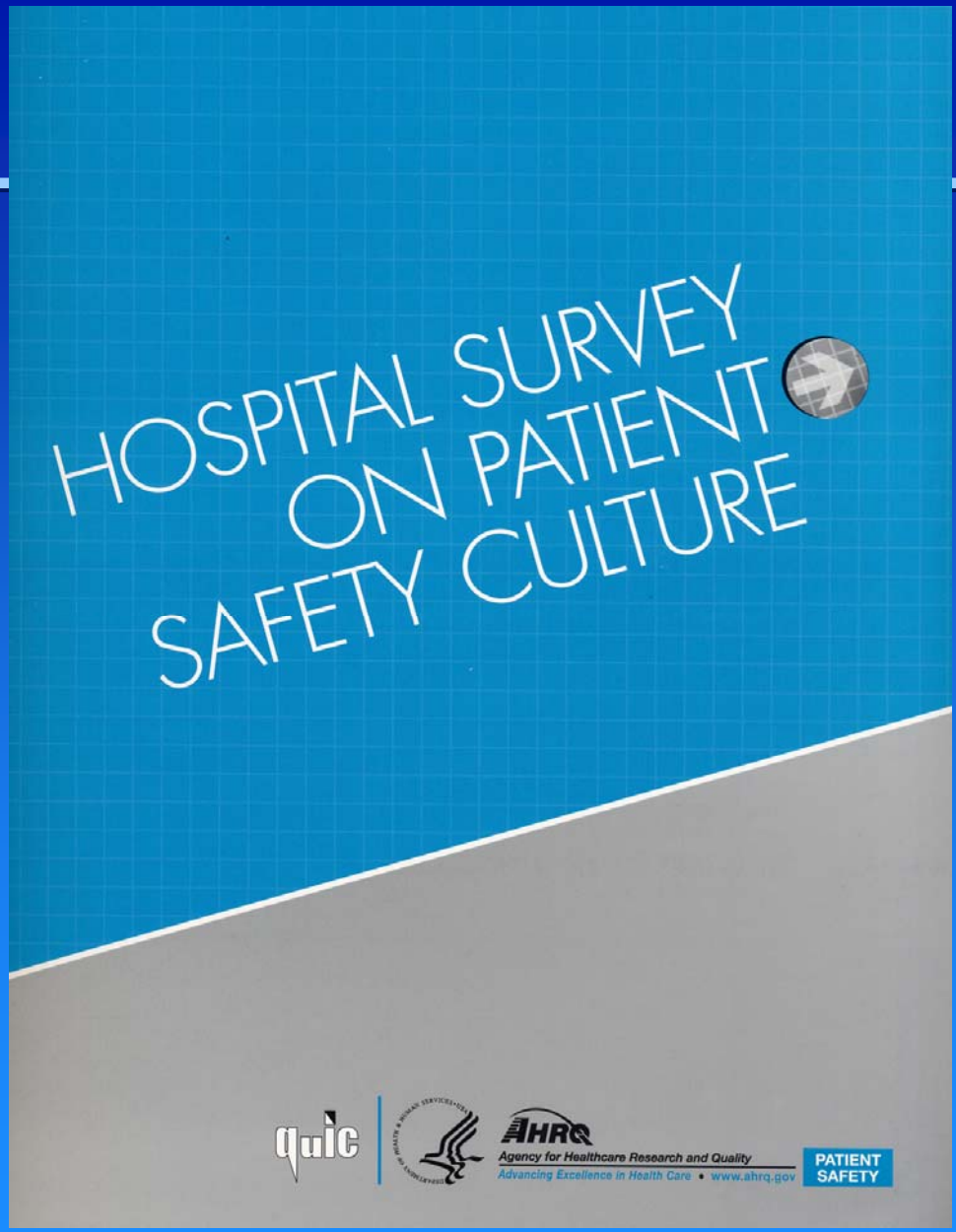
According to the Institute of Medicine (IOM), the biggest challenge to moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but opportunities to improve the system and prevent harm

What is Safety Culture

- The safety culture of an organization is the product of individuals and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management.
- Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures.

How to Measure Culture

- Direct Observation
- Intensive Interview
- Survey


HOSPITAL SURVEY
ON PATIENT
SAFETY CULTURE
quic
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PATIENT
SAFETY

Dimensions of Patient Safety Culture

1. Overall perceptions of safety
2. Overall patient safety grade

- Supervisor/manager expectations & actions promoting patient safety
- Organizational learning--Continuous improvement
- Teamwork within units
- Communication openness
- Feedback & communication about error

Dimensions of Patient Safety Culture

- Non-punitive response to error
- Staffing
- Hospital management support for patient safety
- Teamwork across hospital units
- Hospital handoffs & transitions

Dimensions of Patient Safety Culture

- Each of these dimensions serves as a different component of an organization's safety culture

- Safety culture can be defined as the set of values, beliefs, and norms about what's important, how to behave, and what attitudes are appropriate when it comes to patient safety in a work group.

A Way Forward Through Sense Making

Thank You

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