

# Safety Culture and Patient Safety

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MHA623  
Healthcare Quality

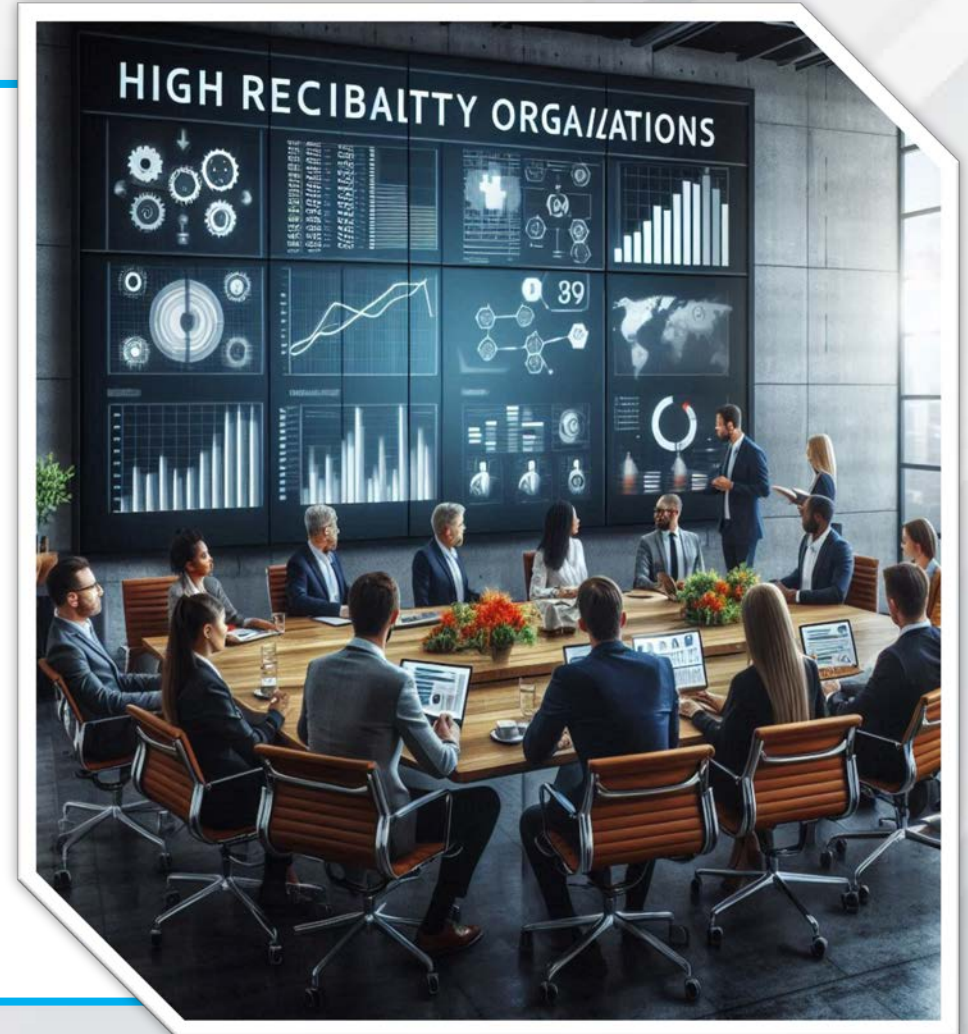
## Lecture 3



# Intended Objectives

1. Define patient safety and its importance in healthcare systems.
2. Explain the principles and characteristics of High-Reliability Organizations (HROs) with examples.
3. Analyze the Swiss Cheese Model and its application in identifying and addressing system vulnerabilities.
4. Discuss the elements of a safety culture and strategies for fostering a no-blame environment.
5. Evaluate tools such as the WHO Surgical Safety Checklist, RCA, and FMEA for improving patient safety.

# High-Reliability Organizations (HROs)



- **Definition:** Organizations operating in high-risk environments with consistently low failure rates.
- **Core Concept:** Focus on safety, adaptability, and continuous improvement.
- **Examples:** Aviation, nuclear power, and high-performing healthcare systems.

# Characteristics of HROs

## ➤ Key Attributes:

- **Preoccupation with Failure:** Treat small errors as warning signs.
- **Reluctance to Simplify:** Avoid oversimplifying complex problems.
- **Sensitivity to Operations:** Stay attuned to real-time conditions.
- **Commitment to Resilience:** Quickly recover from adverse events.
- **Deference to Expertise:** Empower staff closest to the problem.

# Safety Culture



# Definition Examples of Safety Culture

## ➤ American Nurses Association (ANA):

- A culture of safety describes the core values and behaviors that come about when there is collective and continuous commitment by organizational leadership, managers, and healthcare workers to emphasize safety over competing goals (ANA, 2016).

## ➤ The Joint Commission (TJC)

- Safety culture is the sum of what an organization is and does in the pursuit of safety (TJC, 2021).

# Challenges in Developing a Safety Culture

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- Reporting errors discouraged due to fear of punishment.
- Ignorance about errors allows them to persist.
- Solutions involve system changes, not individual blame.

# Safety Culture

- Safety must be a priority at all levels **(leaders to staff)**.
- **Leaders** should **promote safety** through **systems** and **actions**.
- Focus on **solutions**, **not blame**.

# Elements of a Safety Culture

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- **Shared Responsibility:** Everyone works to protect patients.
- **Information Sharing:** Open discussions to reduce patient risk.
- **No Blame Culture:** Focus on system errors rather than individuals.

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# Patient Safety



# Definition of Patient Safety

➤ **WHO Definition:**

*"The prevention of errors and adverse effects associated with healthcare delivery."*

➤ **Core Goal:** Minimize risks and harm to patients during care processes.

# Patient Safety Importance

## ➤ Why Patient Safety Matters?

### ■ Global Statistics:

- WHO: 134 million adverse events annually in hospitals in low- and middle-income countries.
- Estimated 2.6 million deaths per year due to unsafe care.

### ■ Economic Impact:

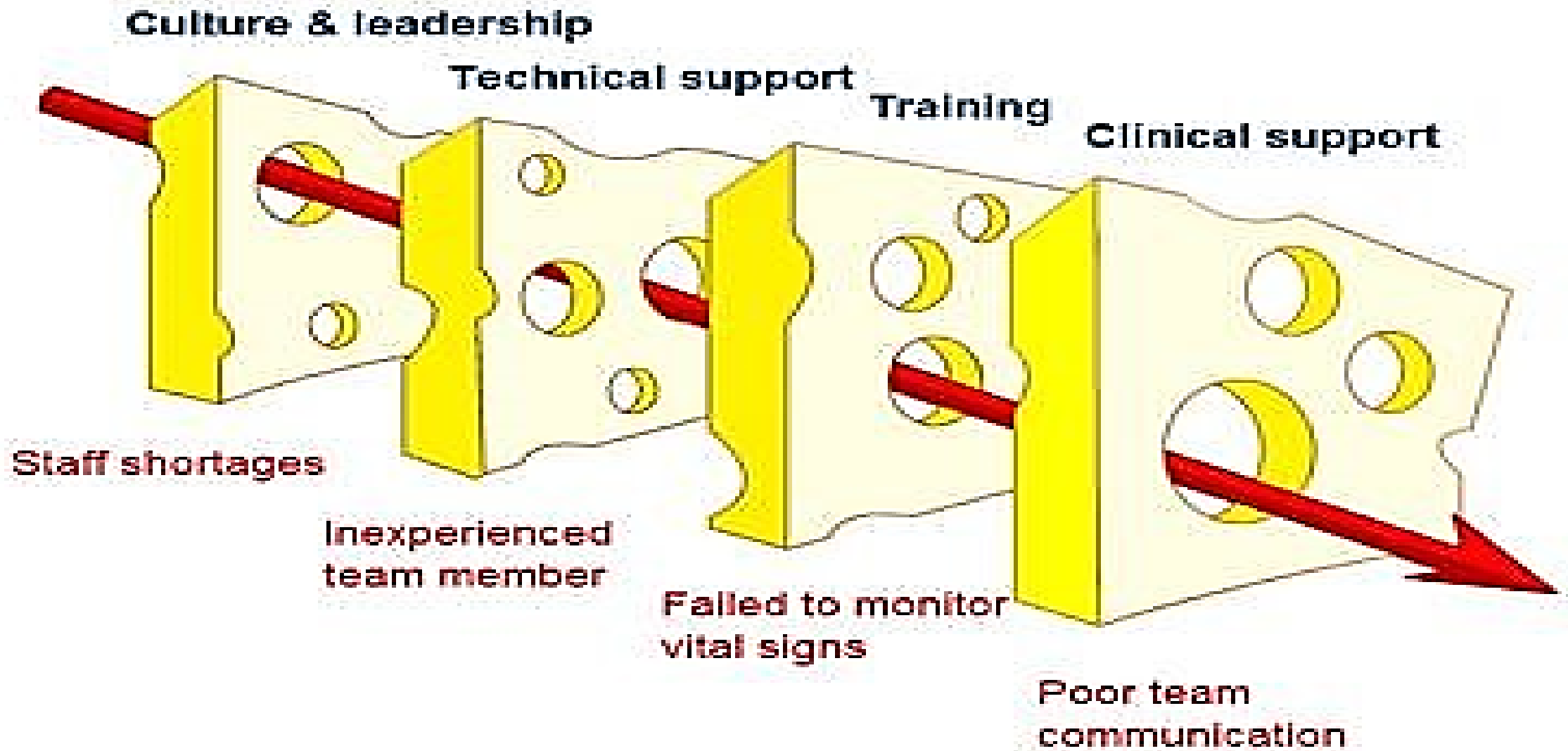
- Annual global cost of medication errors is \$42 billion.

## Key Principles of Patient Safety

### ➤ Principles:

- **Safety as a System Property:** Integrate safety into workflows.
- **Leadership Commitment:** Drive cultural and operational safety.
- **Continuous Learning:** Adapt and improve based on insights.





# Swiss Cheese Model

## ➤ Explanation:

- Errors occur when multiple system gaps align (holes in the cheese).

## ➤ Visualization:

- Show layers of defense and where failures occur.

## ➤ Application:

- Identify vulnerabilities in workflows to strengthen defenses.



## Case Scenario

- A routine laparoscopic appendectomy resulted in a preventable surgical site infection (**SSI**) due to small failures across **patient preparation, equipment maintenance, operating room protocols, and post-operative care**. These errors aligned, **bypassing safety layers** and leading to an **adverse event**.



## Case Scenario

### ➤ Patient Preparation (layer 1):

- A patient is scheduled for a laparoscopic appendectomy.
- The pre-operative nurse forgets to confirm if the patient received the pre-surgical antibiotic prophylaxis due to a busy schedule.

### ➤ A hole in the Swiss Cheese Layer: *Failure in pre-op checklist adherence.*



## Case Scenario

### ➤ Sterilization of Instruments (layer 2):

- The surgical instruments used for the procedure were not sterilized correctly due to a malfunctioning autoclave, which the staff didn't notice.
- The hospital did not have a routine maintenance schedule for sterilization equipment.

➤ **A hole in the Swiss Cheese Layer:** *Lapses in equipment maintenance and monitoring.*



## Case Scenario

### ➤ Operating Room Protocols (layer 3):

- During surgery, one of the OR staff touches the surgical field without changing their gloves after adjusting equipment.
- The team failed to notice the break in aseptic technique.

### ➤ A hole in the Swiss Cheese Layer: *Inadequate enforcement of aseptic protocols.*



## Case Scenario

### ➤ Post-Operative Care (layer 4):

- After surgery, the patient develops a fever, but the nursing staff delays notifying the physician because the patient's vitals were slightly elevated and not flagged as critical in the electronic monitoring system.

### ➤ A hole in the Swiss Cheese Layer: *Delayed recognition of infection signs.*



## Case Scenario

- **Outcome:** The patient is diagnosed with a surgical site infection requiring prolonged hospitalization, intravenous antibiotics, and additional monitoring. This could have been avoided if each defense layer had functioned properly.



## Case Scenario

### ➤ *Learning Points:*

- **Standardized Checklists:** Ensure compliance with pre-op and intra-op safety checklists to prevent critical steps from being missed.
- **Regular Equipment Audits:** Maintain and monitor sterilization equipment rigorously.

## Case Scenario

### ➤ *Learning Points:*

- **Aseptic Technique Training:** Reinforce training and accountability for all OR staff.
- **Early Warning Systems:** Improve systems for identifying and escalating early signs of post-operative complications.

# Patient Safety Strategies

- **Best Practices:**

- Use of Standard Operating Procedures (**SOPs**).
- Regular training and simulations for staff.
- Deployment of **checklists** and **real-time monitoring systems**.

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# Practical Applications



# 1. WHO Surgical Safety Checklist

## ■ What It Covers:

- Verification of patient identity, procedure, and consent.
- Pre-operative briefing for surgical teams.
- Post-operative checks for complications.

## ■ Outcome:

- Reduced surgical mortality rates by over 40%.



# SAFE SURGERY SAVES LIVES



## WHO SURGICAL SAFETY CHECKLIST

WORLD ALLIANCE FOR PATIENT SAFETY



## Surgical Safety Checklist



World Health  
Organization

Patient Safety  
A World Alliance for Safer Health Care

### Before induction of anaesthesia

(with at least nurse and anaesthetist)

**Has the patient confirmed his/her identity, site, procedure, and consent?**

☐ Yes

**Is the site marked?**

☐ Yes

☐ Not applicable

**Is the anaesthesia machine and medication check complete?**

☐ Yes

**Is the pulse oximeter on the patient and functioning?**

☐ Yes

**Does the patient have a:**

**Known allergy?**

☐ No

☐ Yes

**Difficult airway or aspiration risk?**

☐ No

☐ Yes, and equipment/assistance available

**Risk of >500ml blood loss (7ml/kg in children)?**

☐ No

☐ Yes, and two IVs/central access and fluids planned

### Before skin incision

(with nurse, anaesthetist and surgeon)

☐ **Confirm all team members have introduced themselves by name and role.**

☐ **Confirm the patient's name, procedure, and where the incision will be made.**

**Has antibiotic prophylaxis been given within the last 60 minutes?**

☐ Yes

☐ Not applicable

### Anticipated Critical Events

**To Surgeon:**

☐ What are the critical or non-routine steps?

☐ How long will the case take?

☐ What is the anticipated blood loss?

**To Anaesthetist:**

☐ Are there any patient-specific concerns?

**To Nursing Team:**

☐ Has sterility (including indicator results) been confirmed?

☐ Are there equipment issues or any concerns?

**Is essential imaging displayed?**

☐ Yes

☐ Not applicable

### Before patient leaves operating room

(with nurse, anaesthetist and surgeon)

### Nurse Verbally Confirms:

☐ The name of the procedure

☐ Completion of instrument, sponge and needle counts

☐ Specimen labelling (read specimen labels aloud, including patient name)

☐ Whether there are any equipment problems to be addressed

### To Surgeon, Anaesthetist and Nurse:

☐ What are the key concerns for recovery and management of this patient?

## 2. Role of Technology in Patient Safety

### ➤ Examples:

- **Electronic Health Records (EHRs):** Centralized access to patient information.
- **Barcode Medication Administration (BCMA):** Reduces drug administration errors.
- **Clinical Decision Support (CDS):** Alerts clinicians to potential errors.

### 3. Reporting Systems for Patient Safety

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#### ➤ Purpose:

- Capture data on errors and near-misses.
- Facilitate learning and prevention of future incidents.

#### ➤ Examples:

- Voluntary incident reporting systems (**Occurrence Variance Reports (OVRs.)**).

### 3. Reporting Systems for Patient Safety

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#### ➤ Incident:

- **Definition:** An event that causes harm to a patient but was preventable.
- **Example:** A patient receives the wrong medication due to a mislabeling error and develops an allergic reaction.

### 3. Reporting Systems for Patient Safety

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#### ➤ Near Miss:

- **Definition:** An event that could have caused harm but was prevented before it reached the patient.
- **Example:** A nurse notices a mismatched blood unit during verification and stops its transfusion just in time.

### 3. Reporting Systems for Patient Safety

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#### ➤ Sentinel Event:

- **Definition:** A severe event resulting in death, permanent harm, or significant temporary harm that requires immediate investigation.
- **Example:** A patient undergoes surgery on the wrong limb due to a failure in site-marking protocols.

### 3. Reporting Systems for Patient Safety

#### ➤ OVR (Occurrence Variance Reporting):

- **Definition:** A system for documenting and reporting any unexpected event (incident, near miss, or sentinel event) in a hospital.
- **Focus:** Broader system to ensure all events (harmful, non-harmful, or potentially harmful) are tracked, analyzed, and corrected.
- **Example:** Reporting a malfunctioning dialysis machine, even if it didn't cause harm, to prevent future incidents.

## 4. Root Cause Analysis (RCA)

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- **Definition:** Systematic investigation to identify underlying causes of errors.
- **Steps:**
  - Define the problem.
  - Gather data.
  - Identify root causes.
  - Implement corrective actions.

## 5. Failure Mode and Effects Analysis (FMEA)

- **Definition:** A proactive tool to identify potential failures and their impacts.
- **Steps:**
  - Identify processes.
  - Analyze failure modes and their effects.
  - Implement preventive measures.

## Wrap Up

1. **Patient Safety Importance:** Minimizing risks and harm is a core healthcare priority, supported by global statistics and economic impact data.
2. **High-Reliability Organizations (HROs):** Key attributes include a focus on failure, operational sensitivity, resilience, and deference to expertise.
3. **Swiss Cheese Model:** Errors occur when system gaps align; identifying and closing these gaps is critical.
4. **Safety Culture:** Leadership commitment and shared responsibility are vital for ensuring safety.

## Wrap Up

5. **Learning from Errors:** Systems like OVR help capture incidents, near misses, and sentinel events for analysis and prevention.
6. **Practical Tools:** Standard operating procedures, training, and checklists (e.g., WHO Surgical Safety Checklist) reduce error rates.
7. **Role of Technology:** EHRs, BCMA, and CDS systems enhance safety by reducing errors and improving communication.
8. **Proactive Measures:** Failure Mode and Effects Analysis (FMEA) is essential for identifying risks and preventing future incidents.



Thank You