Dr. Israa Al-Rawashdeh MD,MPH,PhD
Faculty of Medicine
Mutah University
2025

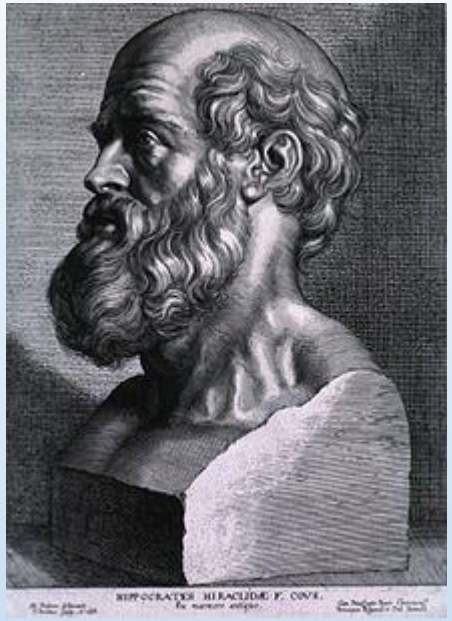
Risk Management in Healthcare

First, Do Not Harm

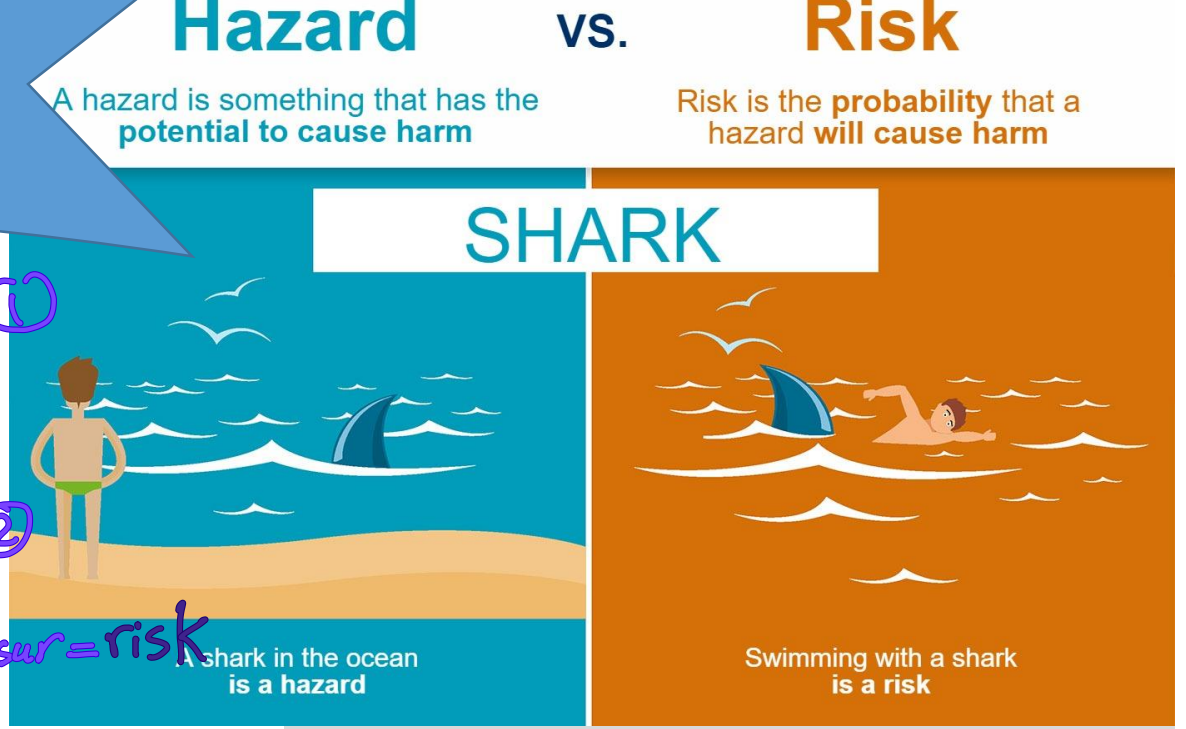
- Primum non nocere
- **Hippocratic Oath**

BUT….

Things can go wrong sometimes!



Definitions



1. **Probability:** is the measure of the likelihood that an event will occur.
2. **Hazard:** potential source of harm.
3. **Risk:** "is a threat that any event or action will adversely affect the ability to achieve the desired goals , it may be avoided through preventive action/s".

مش للحفظ

Factsheet

- Risk of dying while travelling by airplane= 1 in 3 million
- Risk of patient death occurring due to a preventable medical accident, while receiving health care = 1 in 300
- Risk of a patient being harmed while receiving hospital care = 1 in 10

(WHO, 2023)

عشان تعرف أهمية الـ risk mangment

Risk management

- Organized strategies to ***identify***, ***assess***, *and* ***reduce*** negative impacts of risk.
- There are two ways :

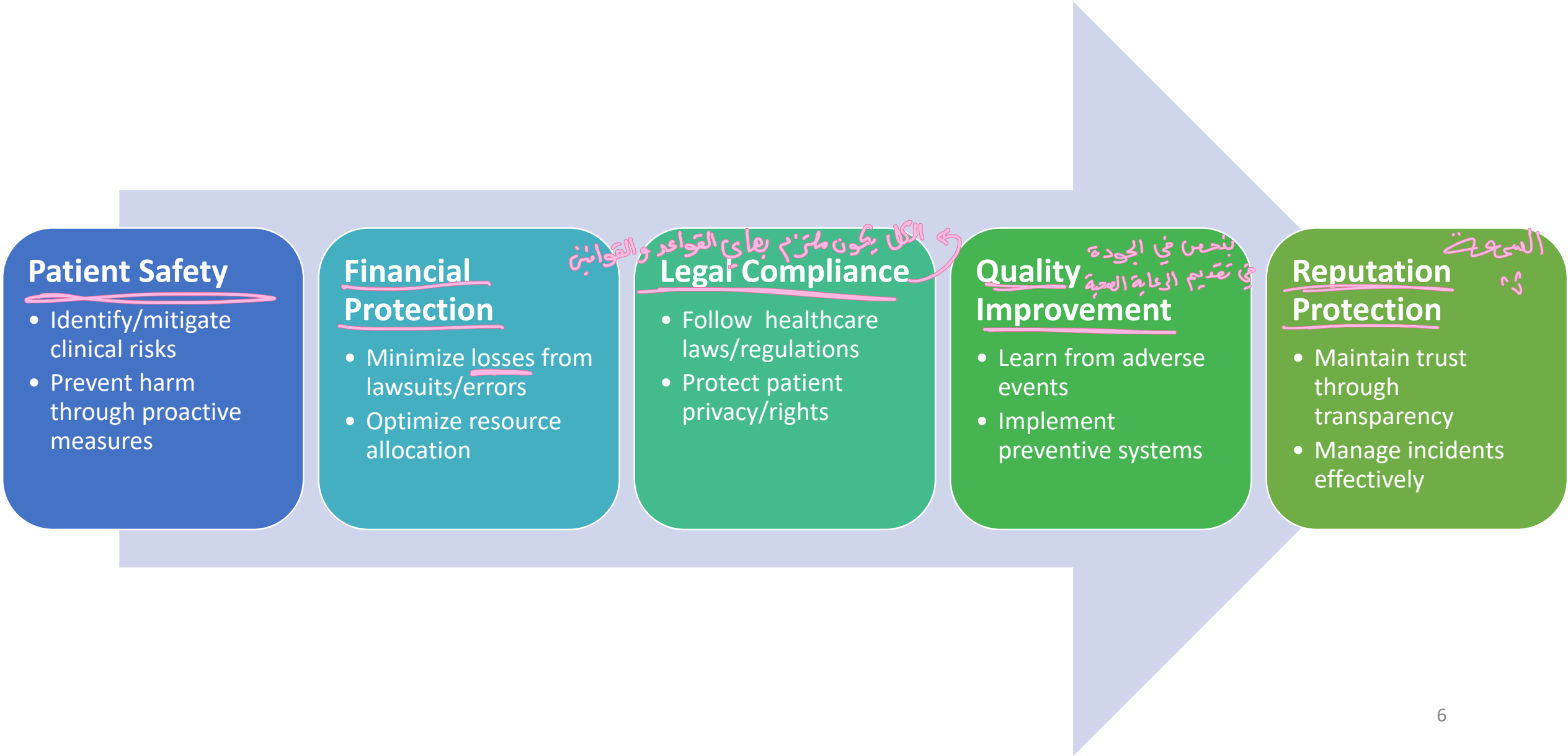
Reactive vs proactive

1. **Reactive:** strategy is **a response-based** approach to **risk**. A plan that specifies what actions should be done **after** harm occurred.
2. **Proactive :** a plan to **prevent** harm **before** it happens.

Reactive strategies should be studied to assess whether a proactive approach can be developed to prevent this specific outcome from happening again.

* use reactive strategies as a base to build the proactive.

Objectives of Healthcare Risk Management



RISK MANAGEMENT STEPS

#5 steps

Life is about MANAGING risk, not not taking any.

Risk management process uses a five step management decision-making model.

Source: https://survey.charteredaccountantsanz.com/risk_management/small-firms/identify.aspx

Step 1: Establish the Context

جميع الظروف المحيطة

- It is done by an evaluation of the external and internal factors:

خارج أو داخل النظام الصحي

✓ **External risks :** result from conditions that the health system usually cannot influence (X control)

✓ (*Market trends* | *Competitors* | *Geopolitical shifts*)

هي ما تقع بتحكم بالنظام الاقتصادي — المنافسين — هي زي العوامل السياسية يعني ما بقدر أتحكم فيها

✓ **Internal risks :** (Can control) including the health system operations and its objectives;

- *Organizational goals* | *Legal compliance* | *Structure/roles*

هي موزعة بالتالي كل واحد بقوم بدوره

الجدول فقط مثال، مش للحفظ

Establish The Context =

Strengths (Internal) نقاط القوة	Weaknesses (Internal) نقاط الضعف
• Skilled staff	• Old-fashioned equipment
• Strong finances	• Staff shortages
Opportunities (External) الفرص	**Threats (External) التهديدات**
• New funding programs	• Policy changes
• Tech partnerships	• Economic downturn

1

2

Step2: Identify Risks

- Risk identification is the Proactive detection of potential harms by the healthcare professional in the health care services and environment.
- The risks identified are entered in the Risk Management Tool (RMT) ***(See next slide)***

exposure: walking on the banana + hazard: banana on the floor = risk: slebing

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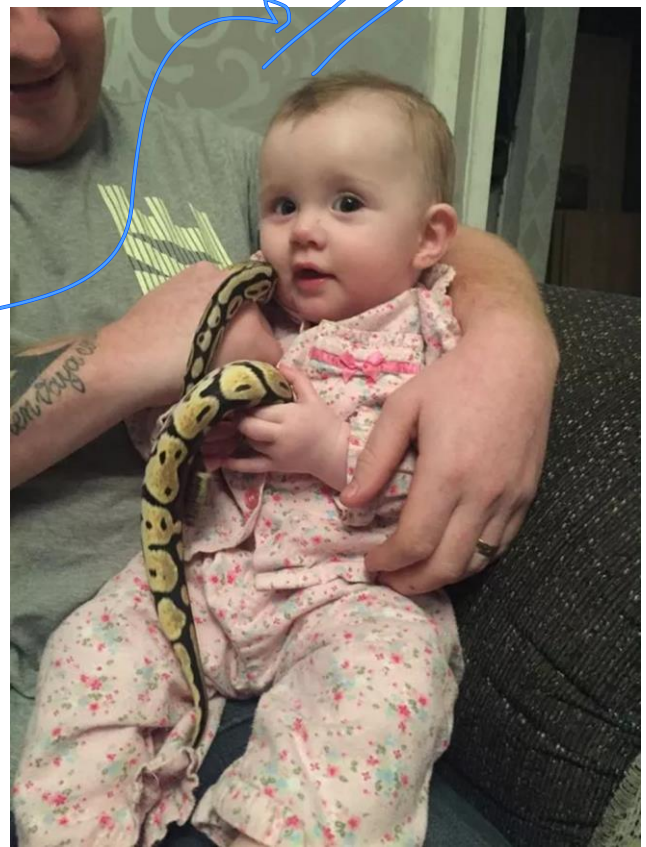
نضع الاشي المضحك الفكرة؟؟



Risk Management Tool in healthcare

→ To identify the risk

Department

System/Process

1-5	Low risk	
6-12	Medium risk	
15-25	High Risk	

Risks Identified	Date risk identified	Causes	Current Controls in the system	Likelihood (L) (score 1 to 5)	Impact Severity (S) (Score 1 to 5)	Overall Risk Rating R= L X S (High, Medium, Low)	Risk Response Strategy (Accept, Control, Transfer, Avoid)	Actions required	Responsible person/s	Resources required	Due Date for actions	Post treatment Likelihood (L) score 1 to 5	Post treatment impact severity (S) score 1 to 5	Post-treatment Risk score (High, medium, low)	Review date	Contingency plan (What will you do if the risk really happens?)
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Figure 2: Risk Management Tool in healthcare.

Healthcare Risk Categories

1. Clinical Risks
2. Operational Risks
3. Financial Risks
4. Legal and Regulatory Risks

1. Clinical Risks

* care cause directly harm to px

- Risks impacting *direct patient care* and safety.
- **Top Examples**:
- Medication errors
- Surgical complications
- Hospital-acquired infections
- Patient falls

2. Operational Risks

- *Day-to-day process* failures. كل يوم بتشتغل
- **Examples:**
- Staffing shortages صارلي نقص بالموظفين بالتالي المرضة بدل ما تشتغل مع 10 بيرجعها تشتغل مع 50 مريض ← risk for error ↑
- Equipment failures أجهزة قديمة
- Supply chain disruptions بتقل سلاسل التوريد (لازم تاخ)
- Scheduling errors زي مواعيد المرضى، شفتات الدوام
- Facility maintenance issues

كل يوم بيجي صيانة للأجهزة !!

3. Financial Risks

Threats to the financial stability, sustainability, and viability of healthcare organizations.

- **Examples:**

Revenue losses due to low patient volumes or payer reimbursement cuts

Billing errors or fraud

Budget Deficits

Inadequate cash flow management (Payment delays)

Increasing healthcare costs.

4. Legal and Regulatory Risks

The potential for non-compliance with laws, regulations, standards, and ethical guidelines of healthcare delivery and operations.

- **Examples:**

Violations of patient privacy laws

Failure to meet accreditation standards, Malpractice claims, lawsuits, and penalties for regulatory non-compliance.

"Which risk scares you most as a future doctor?"

Step2: Identify Risks

(what can go wrong?)

- **Identify why and how can it happen**

- Consider the possible *causes and scenarios* of each risk identified.

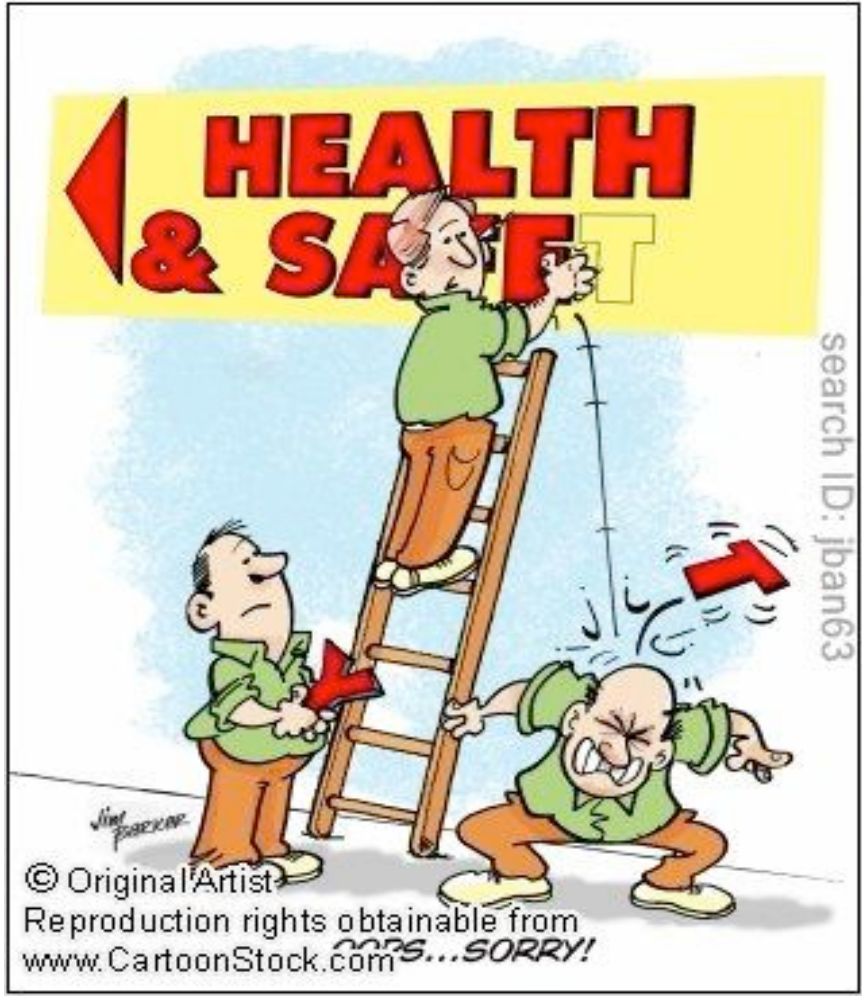
1 cause → multi risk

1 risk → multi cause

❑**Cause** - The underlying triggers that could lead to a risk event. These may be singular or multiple in nature, and one cause might relate to several different risks.

❑**Consequence** - The potential outcomes if the risk occur. A single risk event may have a specific consequence or multiple possible consequences. A consequence may be common across multiple risks

" the same "



Step2: Identify Risks

Sources & Methods for Risk Identification

Healthcare organizations use multiple approaches to detect risks:

- **Risk Assessments & Audits**
  - Systematic evaluation of processes/environments
- **Incident Reporting Systems**
  - Staff-reported incidents/near-misses
- **Root Cause Analysis (RCA)**
  - Investigates adverse events to find underlying causes
- **Stakeholder Feedback**
  - Patient complaints شكاوي المرضى
  - Satisfaction surveys مدى رضى المرضى
  - Staff input

"Which method would be most effective for catching medication errors?"

Step 3: Analyse & Evaluate Risks

- **Analyse Risks:** developing an understanding of the risks identified. It includes the following:

1. Risk Level Assessment

- Score inherent risk (pre-controls)
- Example: "High risk" = frequent falls in geriatric ward

2. Root Cause Investigation

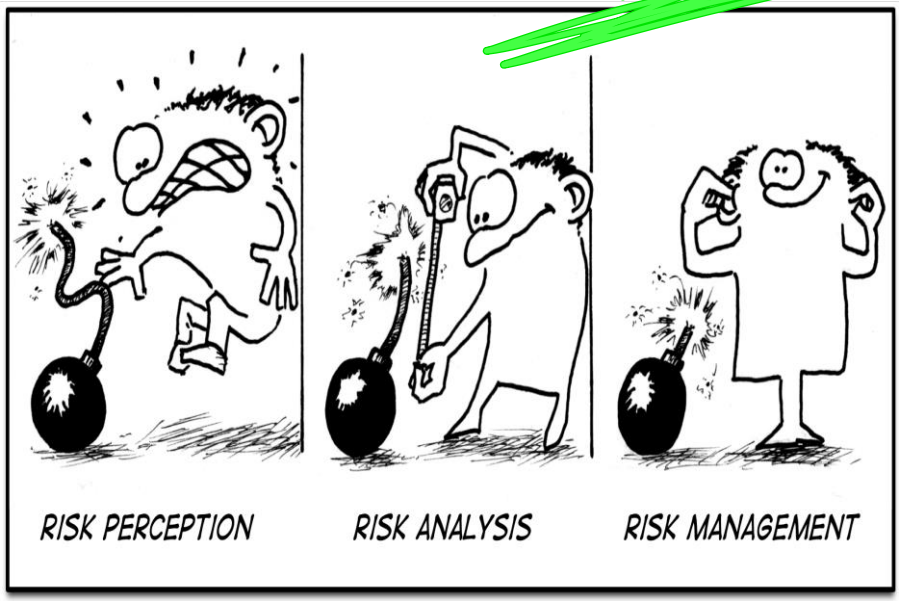
- Identify underlying systemic factors

3. Control Evaluation

- Assess existing measures:
  - Policies/protocols
  - Engineering controls
  - Staff training programs

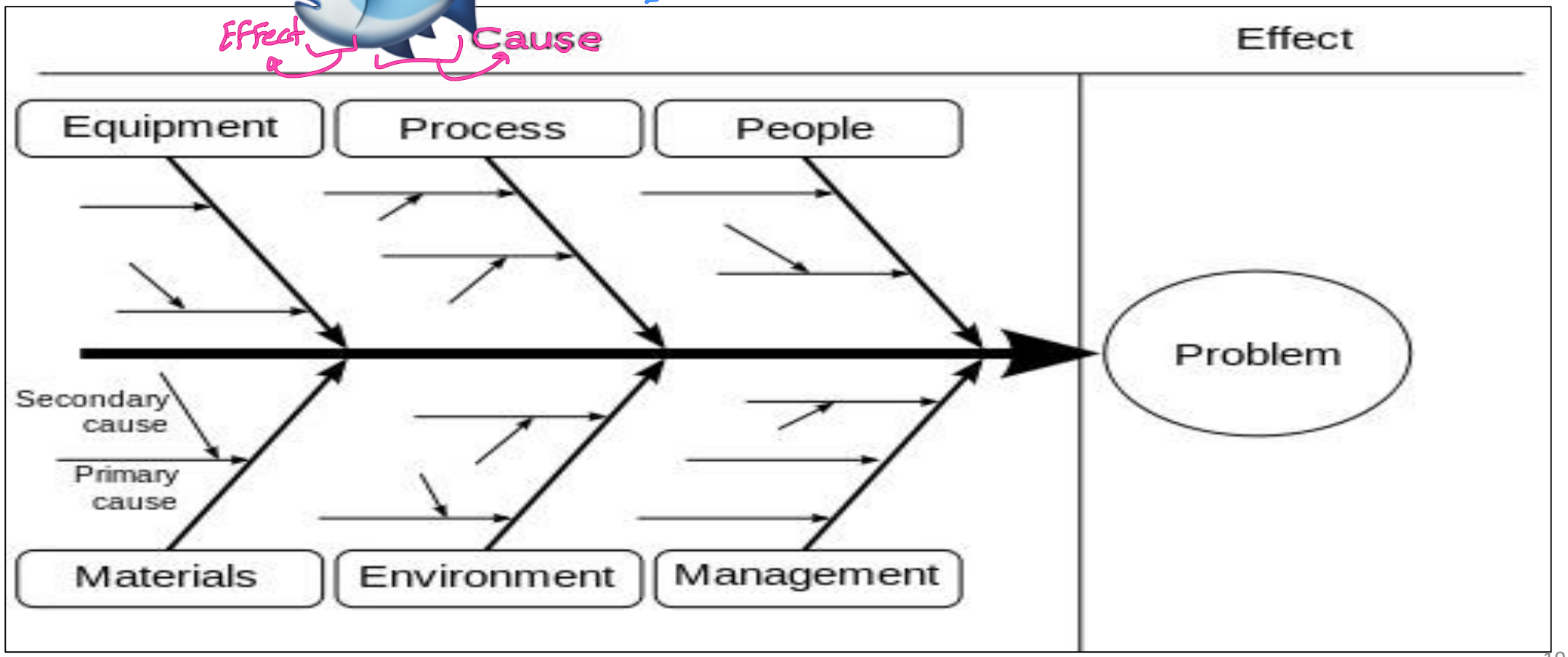
4. Residual Risk evaluation

- Calculate remaining risk after controls

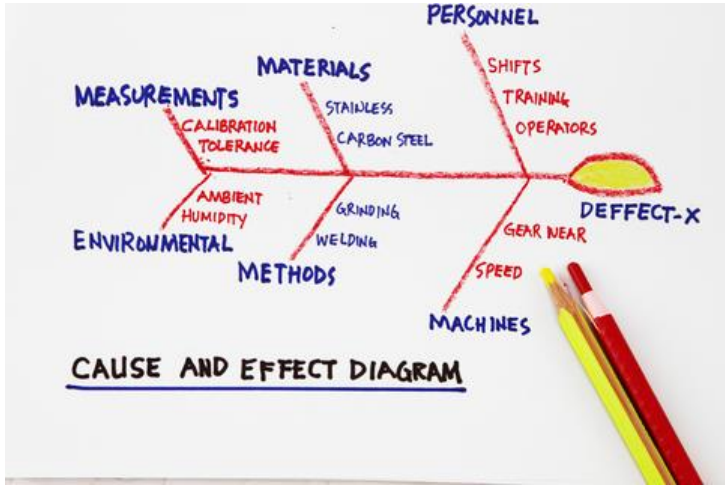


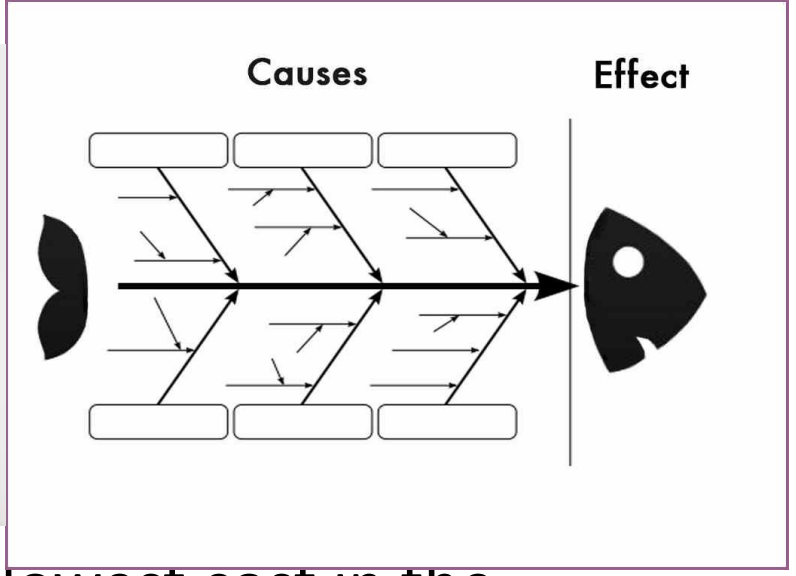
Step 3: Analyse & Assess Risks

Risk analysis can be done using Root Cause Analysis (RCA)



Root Cause Analysis RCA



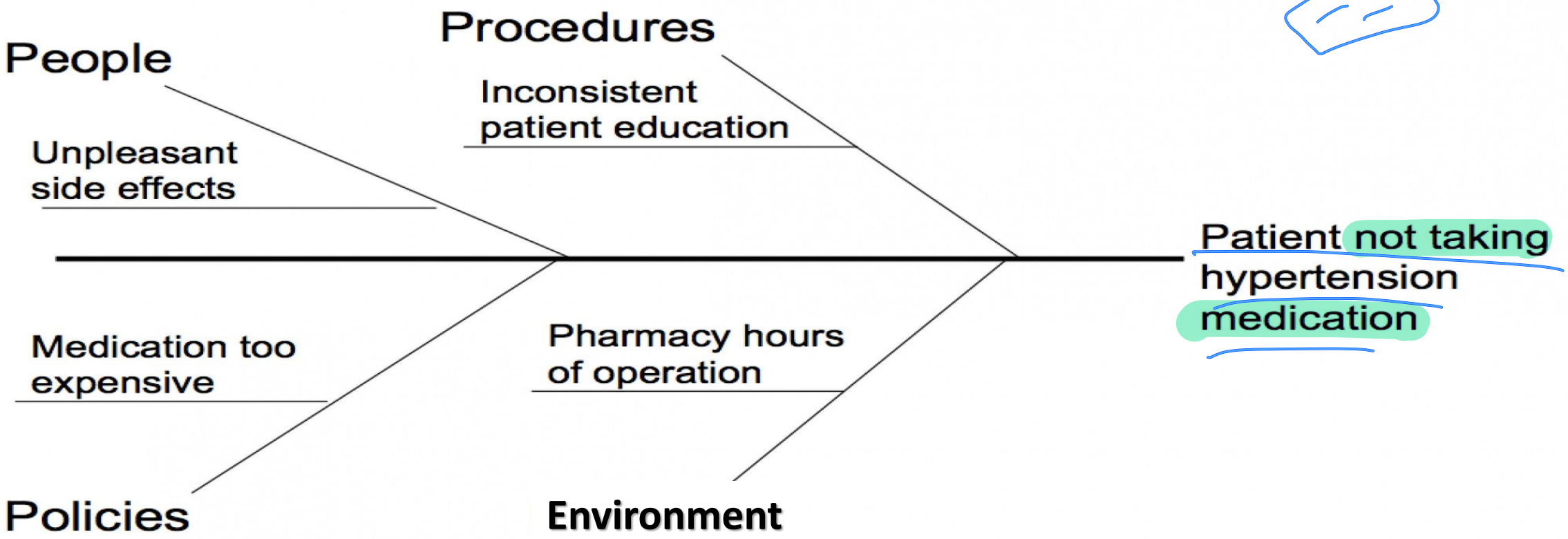


- 🐟 **Tool**: Fishbone diagram
- **Systematic Approach**
- 🔍 **Purpose**: Prevent recurrence of adverse events at lowest cost in the simplest way.S
- **Best Method**: brainstorming

A root cause : is a fundamental factor that, if removed, can prevent the recurrence of the final undesirable outcome. *Example*: Faulty alarm system → Patient fall

- **A causal factor** elements that contribute to an event's outcome but may not be the primary underlying cause. Removing causal factors can still improve outcomes but may not prevent recurrence with certainty. *Example*: Staff fatigue + poor lighting → Same fall event
- **Some problems have multiple root causes**

Simple Fishbone Diagram Example



Adapted from King, Q.L. (2006). *Quality Management in Healthcare* (2nd ed.).

Step 3: Analyse & Evaluate Risks

*مهم للامتحان جاااي مسائل حسابية

Risk assessment:
Determine the Risk Level

Risk score (R) = Likelihood (L) × Severity of impact (S)

Risk Assessment: (R)

Quantitatively or Qualitatively

- In **Quantitative Risk Assessment** **(QRA)** a numerical estimate is made of the probability that a defined harm will result from the occurrence of a particular event.
- Numerical estimation of harm probability
- **Requirements**:
  - Measurable data (e.g., incident rates, costs)
  - Statistical models (advance)
  - More accurate
  - Difficult to implement
  - Large scale complex organizations

Quantitative risk assessment example

EVENT	LIKELIHOOD (A)		IMPACT (B)		RISK FACTOR (A x B)
Fire in data center	0.7	X	0.9	=	0.63
Loss of power	0.5		0.8		0.40
Staff illness	0.6		0.5		0.30
Hurricane	0.4		0.9		0.36
Water leak	0.3		0.5		0.15
Employee forgot to log off	0.8		0.3		0.24

Medication Error Risks

Risk Event	Probability	Severity (Cost)	Total Risk
Wrong dose administered	0.7	$90,000	$63,000
Missing allergy check	0.5	$80,000	$40,000
Labeling error	0.3	$50,000	$15,000

- Qualitative risk assessment:
- Categorization of the risks
- Based on the risk assessor's experience and knowledge (subjective rating system)

للإمتحان

Categories:

- **Low risk**
- **Medium risk**
- **High risk**

"When might qualitative assessment be better than quantitative?"
→ *Answer*: When data is limited or rapid triage is needed.

Likelihood

Risk score (R) = Likelihood (L) × Severity of impact (S)

- **Based on the expertise, knowledge!**
- **Generally the higher the degree of controls existed, the lower the likelihood.**
- **1-5 score**

LIKELIHOOD

The probability of risk occuring, say within the next twelve months, that can be expressed in terms of a percentage between 0% and 100%

الجدولين حفظ للاسف :-

Rating	Frequency	Probability	Example in Healthcare
5: Almost Certain	Monthly+ (كل شهر مرة) L=5	>90%	Medication errors in busy ED (emergency department)
4: Likely	Several times/year (bimonthly)	50-90%	Patient falls in geriatric ward
3: Possible	Yearly <2 years	10-< 50%	Wrong-site surgery (with checks)
2: Unlikely	Every 2-5 years	5-10%	MRI technical incident
1: Rare	< Once in 5 years or more (L=1)	<5%	Hospital fire

Severity of impact (S)

Risk score (R) = Likelihood (L) × Severity of impact (S)

SCORE	Impact Description	Patient Care Consequences	Organizational Impact	Example
5: Catastrophic /extreme	Death/permanent disability	Care completely affected	Major lawsuits, accreditation loss	Wrong-patient surgery
4: Major	Long-term harm	Longer hospitalization	Significant financial losses	Hospital-acquired infection
3: Moderate	Temporary harm (>1 week)	Additional treatments	Localized corrective actions	Medication error (caught early)
2: Minor	Temporary discomfort	Minimal intervention	Department-level review	Short delay in non-urgent care
1: Negligible	No measurable harm	No impact	Documentation only	Near-miss with no consequences

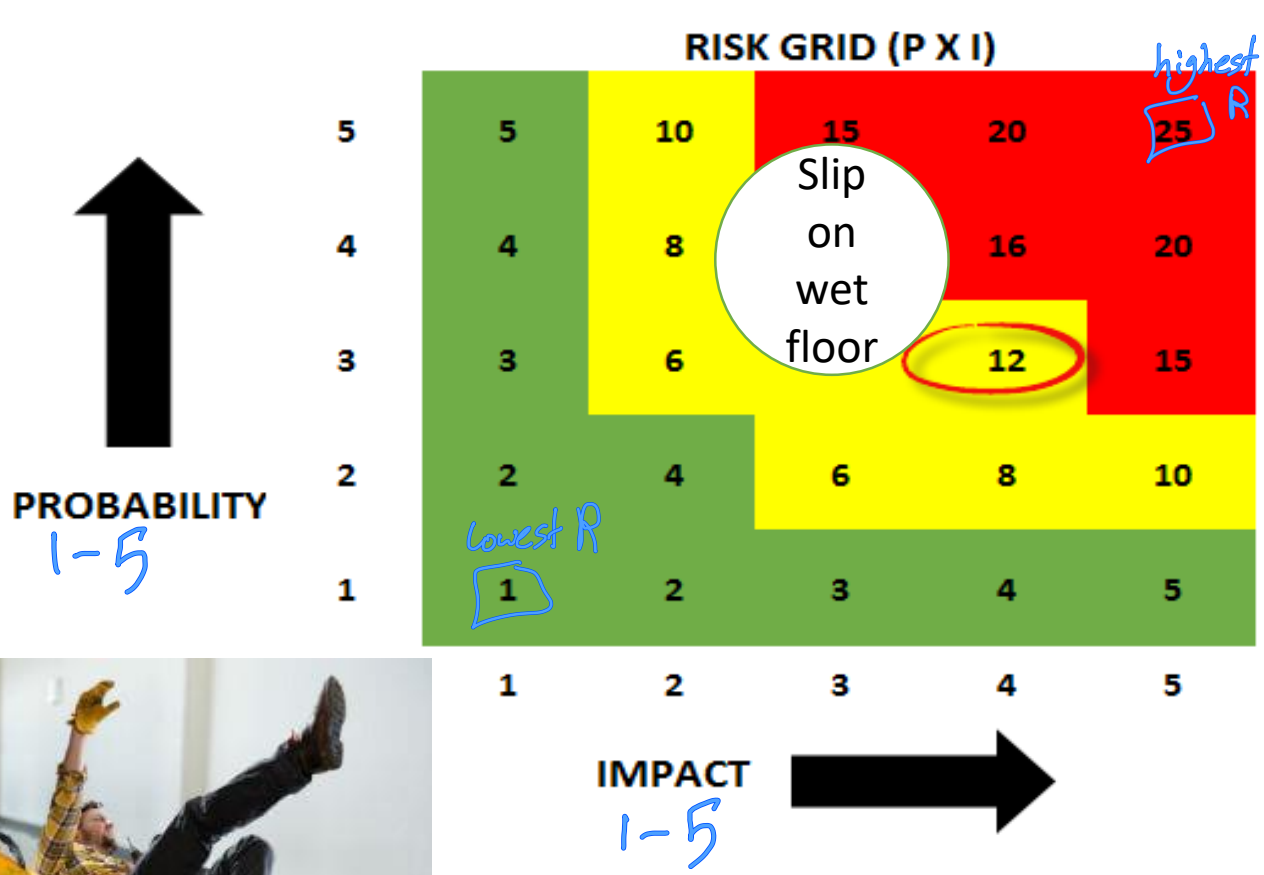
The scoring ranges from 1 (Negligible impact) to 5 (Extreme impact).

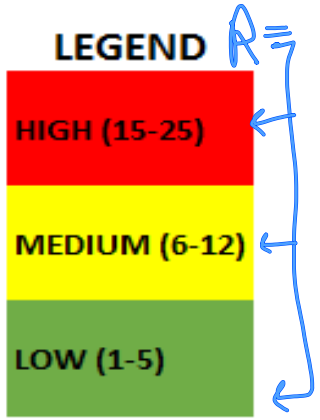
Risk Impact Areas:

People
Economic
Information
Property
Reputation
Capability

Risk Assessment matrix

Risk score (R) = Likelihood (L) × Severity of impact (S)





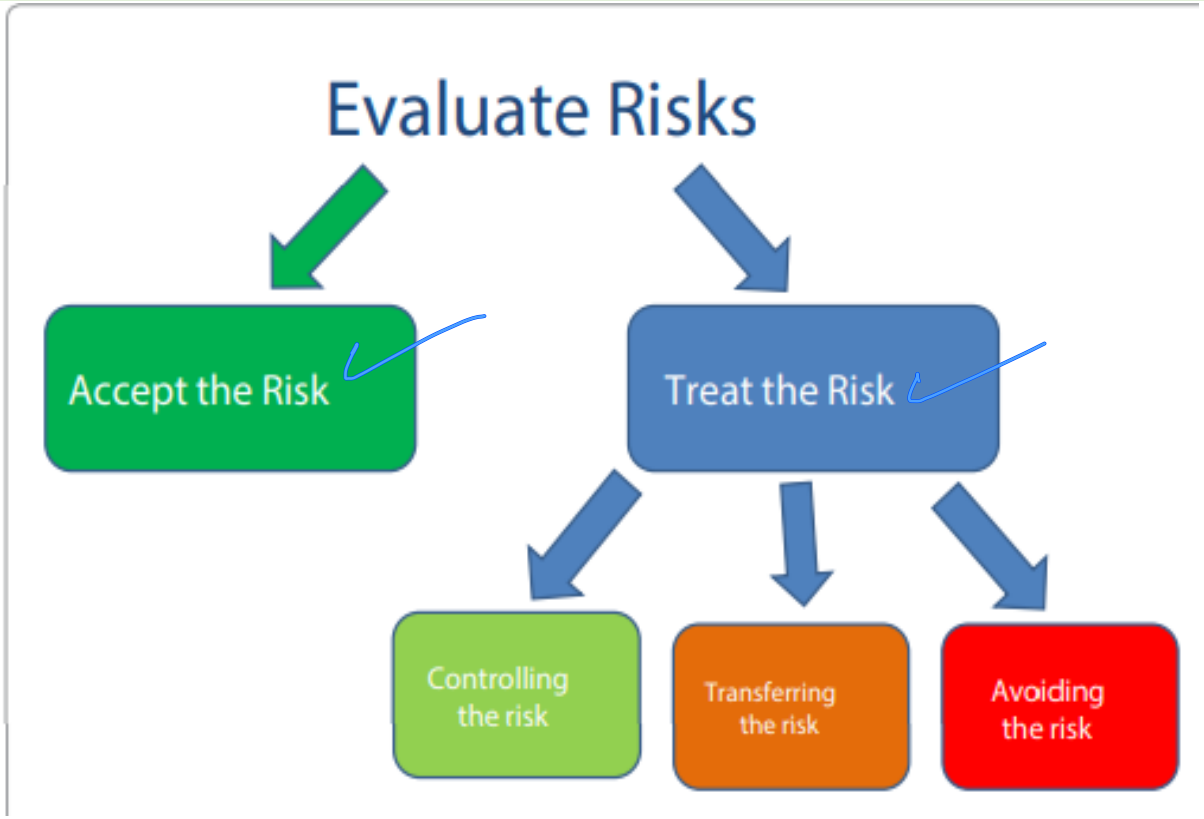
Risk: Description of the Risk

Probability	3 → that's mean 10-5% احتمالية حدوثه < 2y
Impact	4 → major impact
Risk Value	12

Risk is classified as MEDIUM.

Step 3: Analyse & Evaluate Risks

The purpose of risk evaluation is To prioritize risks based on their likelihood × severity score and determine appropriate management strategies.



Step 4: Treat risk

Determine the action

Controlling Risk

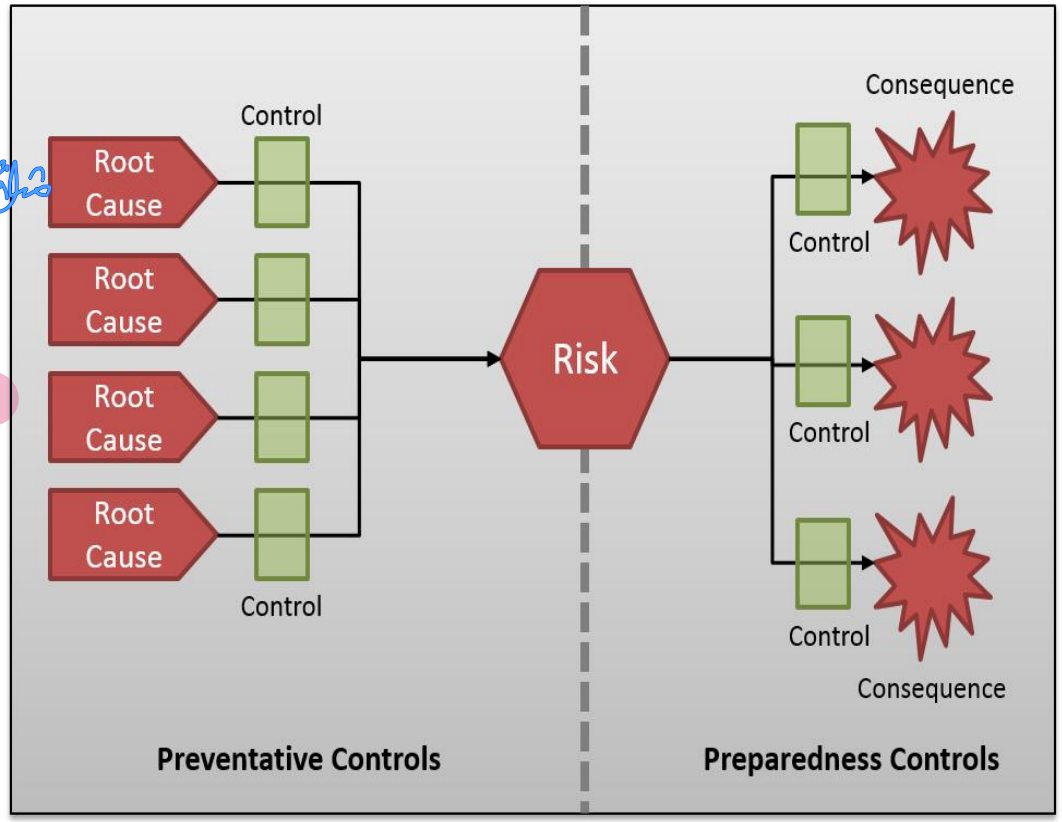
1. Risk Avoidance

Eliminate the risk entirely **Example**: Replacing hazardous chemotherapy drugs with safer alternatives

(risk) حريق ← مثلاً : ممكن تقرب مصدر النار على الأجهزة والمعدات
الحل: ابعاد هذا المصدر

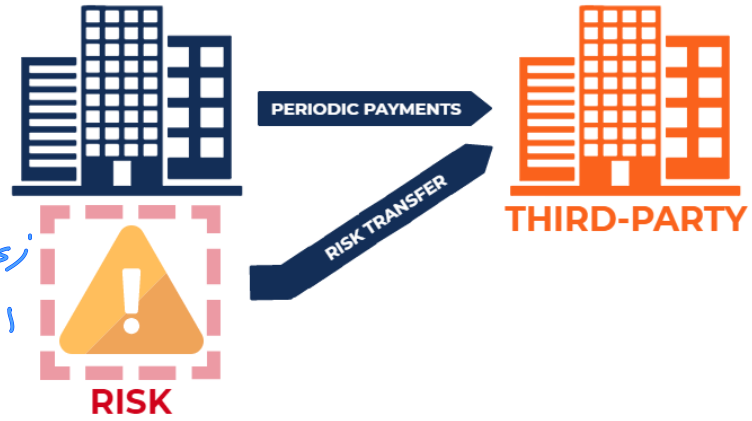
2. Risk Reduction (mitigation /Control):

Implement controls to reduce likelihood/impact to an acceptable level. This occurs when risk avoidance is considered to be difficult to do because of time or expense. **Example**: Barcode scanning → Reduces medication errors by 50%, Fall alarms → Decreases patient falls.



Step 4: Treat risk

Determine the action



زي شركات التأمين

3. Risk Transfer – Shift financial burden to another party

Example:

- Malpractice insurance
- Outsourced diagnostic services

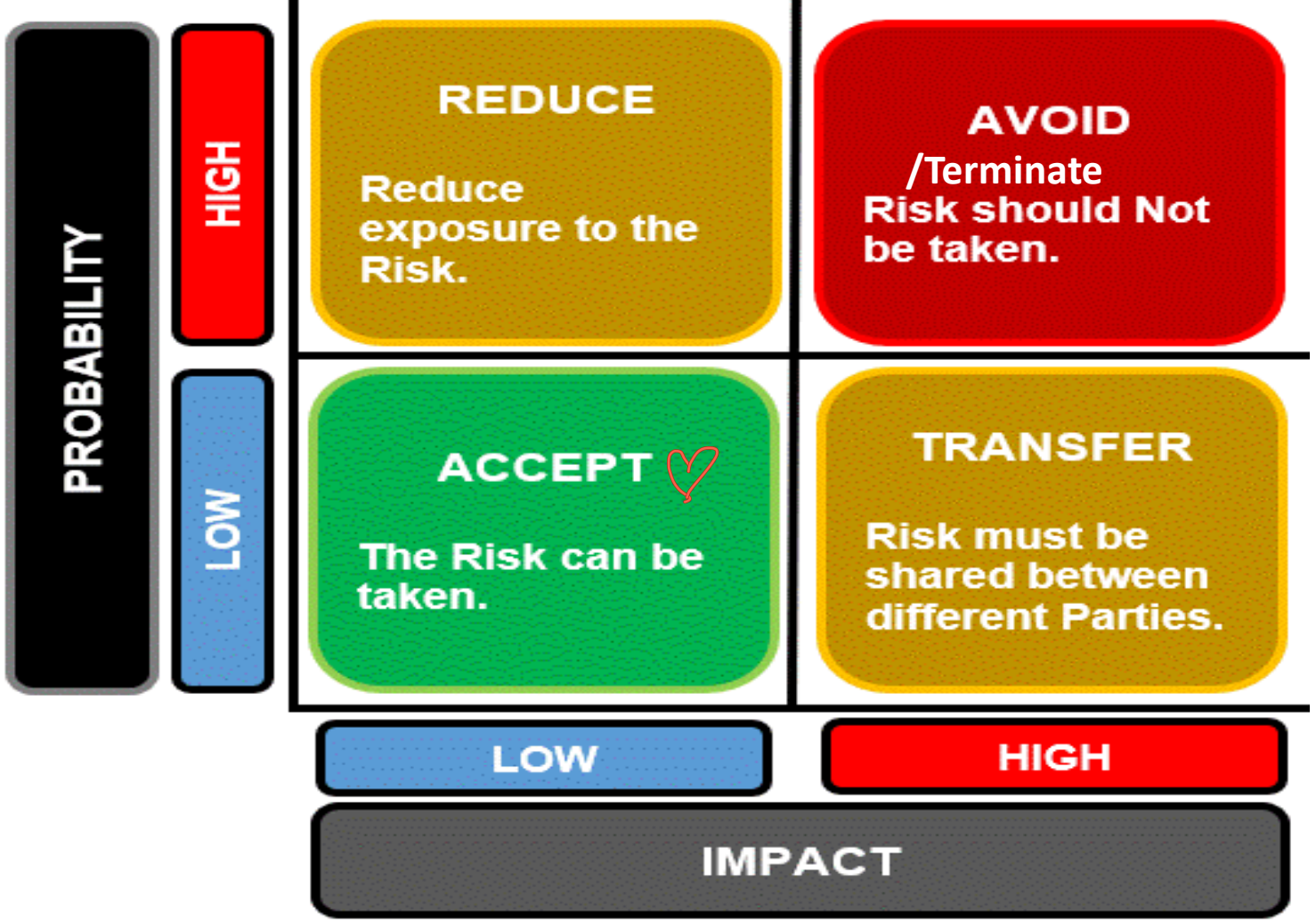
4. Risk Retention – **Accept the risk** when:

- Cost of treatment > potential loss
- Risk level is acceptable
- No management option exist
- Residual risk will remain after management options done

Example: Minor paperwork errors

No further action is taken to treat the risk. However, ongoing monitoring is recommended.

Residual Risk: *"The remaining risk after controls are applied"*. Residual Risk = Total Risk – Controls
It's not always feasible to eliminate all the risks. Instead, we take steps to reduce the risk to an acceptable level.
(**Management**: Monitor and review periodically)

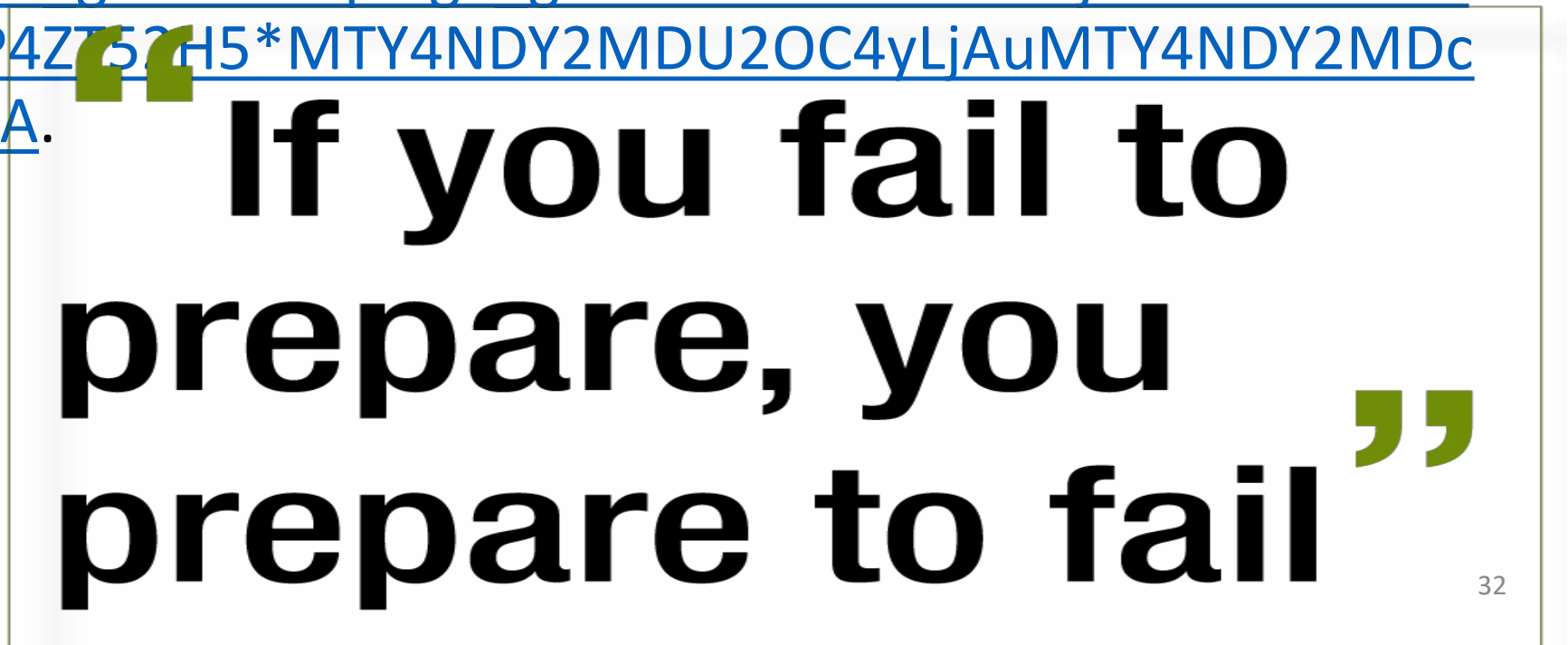


"Think Like a Risk Manager"
Scenario: You notice a nurse skipping hand hygiene.
Question: What's the risk? How would you address it?

- **>15: Immediate action**
- **6-15: Plan mitigation** or reduction
- **≤5: Monitor** + accept

المواضيع اللي نركز عليها من سلايد 22 للآخر ♡

- https://survey.charteredaccountantsanz.com/risk_management/small-firms/context.aspx
- https://pdfs.semanticscholar.org/d57e/c1af8951cf441643fccfbea7c28807cfa5cd.pdf?_gl=1*1ucq4og*_ga*ODAxNzUzNzkxLjE2ODM2NTcxODU.*_ga_H7P4ZT52H5*MTY4NDY2MDU2OC4yLjAuMTY4NDY2MDc0MS42MC4wLjA.



اللهم علمنا ما ينفعنا وانفعنا بما علمتنا
وزدنا اللهم من فضلك علما 🩶

مع انه مادة HA و H O علم لا ينفع
لكن نسأل الله العلم النافع دائما ☺

دعواتكم ♡

Done by : Marwa Amwas.