

Topic 2: Root Cause Analysis

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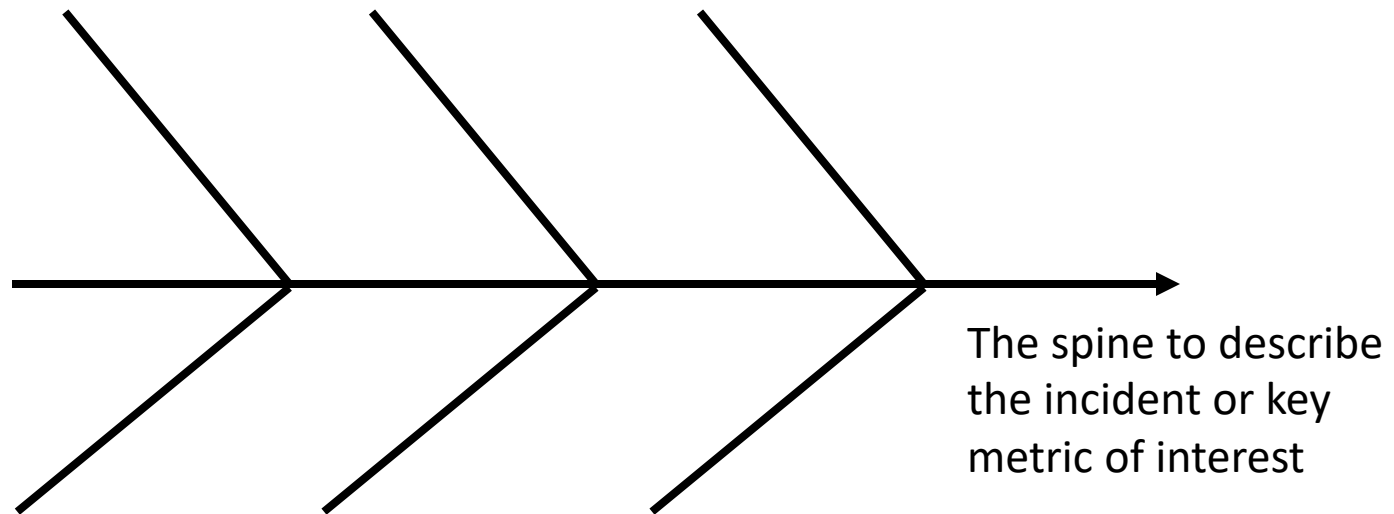
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Objectives

- By the end of this lecture, the learners will be able to
- Apply the Ishikawa's fish bone diagram and the 5'Why's approach for root cause analysis
- Describe 3 different ways for thematic grouping of causes in a fish bone diagram
- Describe the importance of having good patient safety culture to reduce untoward incidents

Ishikawa's fish bone diagram



A graphical representation used for structured brainstorming for identification of contributing factors.

Thematic grouping of causes

The generic 7'M's:

1. Man – e.g. staffing, lack of manpower
2. Machines – e.g. equipment failure
3. Methods – e.g. procedural failures
4. Materials – e.g. medication errors
5. Measurements – e.g. wrong lab results
6. Money – e.g. financial constraints
7. Milieu (Environment) – e.g. busy, stressful ward

Thematic grouping of causes

The London protocol of system analysis of clinical incidents. They grouped the contributing causes as:

- Patient factors
- Staff factors
- Task & technology factors
- Team factors
- Work environment factors
- Organizational and management factors
- External factors

<https://www.imperial.ac.uk/patient-safety-translational-research-centre/education/training-materials-for-use-in-research-and-clinical-practice/the-london-protocol/>



Thematic grouping of causes

Patient factor	Condition (complexity & severity of illness) Language and communication barrier Personality and social factors
Staff factor	Competency of knowledge and skills Compliance – intentional/unintentional violation or non-compliance of policies, protocols, guidelines Personality
Task & technology factor	Complexity of task Task complexity, design, ease of execution Technological failures Availability of protocols, guidelines, decision making aids

Thematic grouping of causes

Team factor	Verbal communication Written communication Supervision and seeking help Team structure (consistency, congruence), support, leadership
Work environment factor	Staffing Patient load Stress, on-calls, working hours Ergonomics – lighting, spaces
Organizational and management factors	Financial resources & constraints Organizational structure Policy, standards and goals Safety culture and priorities

Thematic grouping of causes

- According to the 7 groups of “waste” (‘muda’) (if redundancy paths are the concern)
 - T = Transport
 - I = Inventory
 - M = Motion
 - W = waiting
 - O = Over-processing
 - O = Over-production
 - D = Defect

‘TIM WOOD’

Thematic grouping of causes

- T = Transport, e.g. unnecessary transfer of patients
- I = Inventory - e.g. excess, unnecessary clerical works
- M = Motion – e.g. waiting for unnecessary investigations results

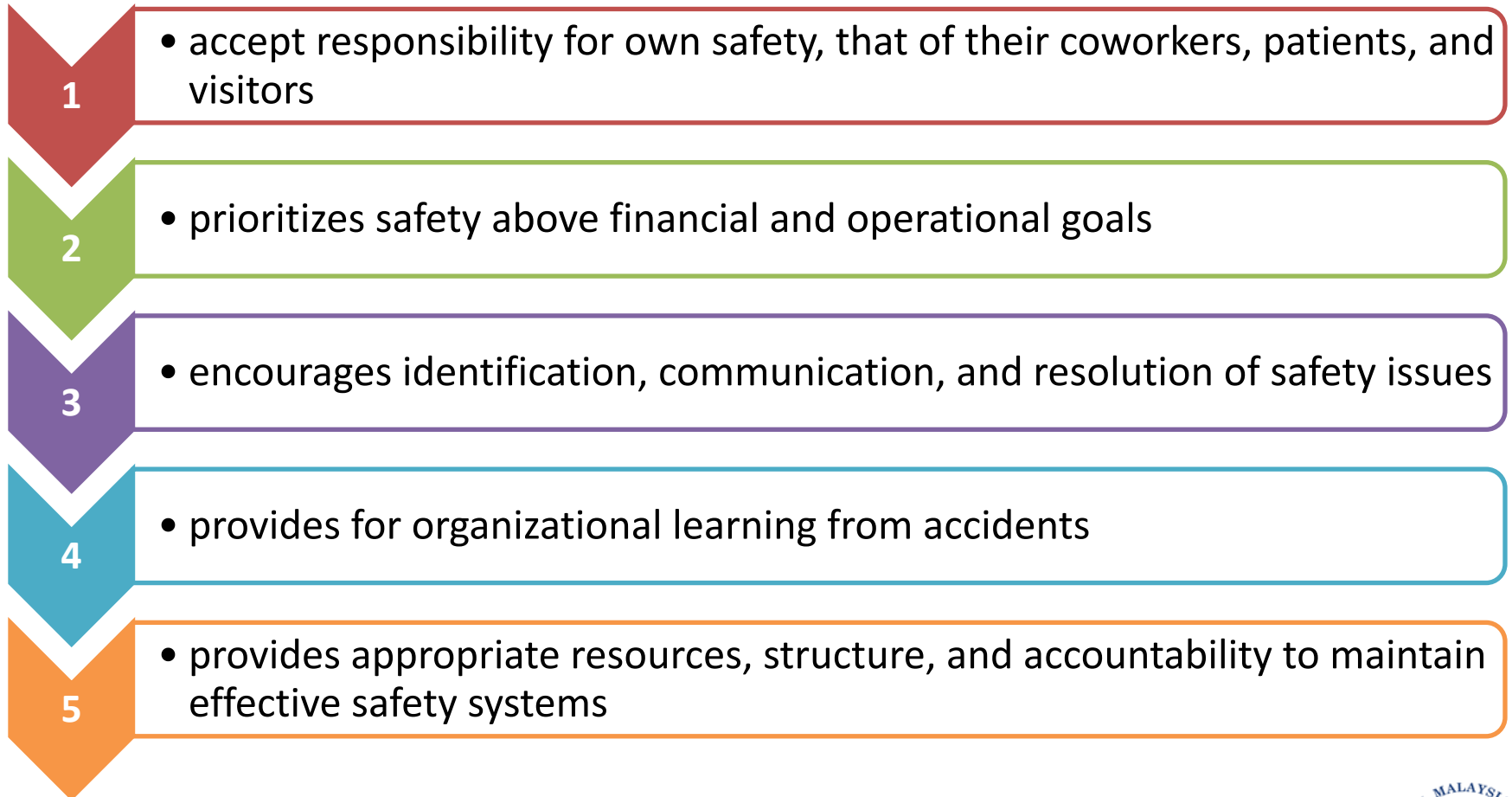
Thematic grouping of causes

- W = waiting – e.g. prolonged wait for referral
- O = Over-processing - e.g. redundant repeats of blood works
- O = Over-production – e.g. repeat X-rays for patients referred from another hospital
- D = Defect – diagnostic errors, procedural failures

5 Whys

- It is an approach where we repeatedly ask the question “why” in order to dive deep into the narrative of an incident in order to allow us to try to identify the root cause of the problem.

Patient Safety Culture



Ref: Forum and End Stage Renal Disease Networks, National Patient Safety Foundation, Renal Physicians Association. National ESRD Patient Safety Initiative: Phase II Report. Chicago: National Patient Safety Foundation, 2001.