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Accident Investigation Basics

January 2023

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Why Investigate Accidents or Near Misses?

Definitions

- **Accident:** An incident is an event that causes injury or death to people or damage to property.

- **Near miss:** A near miss is an event that almost results in injury, death, or damage. A near miss is a warning sign that an incident is likely to occur, so near misses should also be investigated.

Root causes – are they really?

- “Carelessness”
- “Human error”
- “Inattention”
- “Rushing”
- “Accidental injury? I wasn't present.”

“When the determinations of the causal chain are limited to the technical flaw and individual failure, **typically the actions taken to prevent a similar event in the future are also limited:** fix the technical problem and replace or retrain the individual responsible. Putting these corrections in place leads to another mistake: The belief that the problem is solved. –

Columbia Investigation Board, NASA 2003

- #1 Reason = prevent reoccurrence and keep employees safe
- Required by Law and CSU policy
- Investigate incidents in order to pinpoint the root causes. Addressing these **underlying issues allows you to prevent similar incidents from recurring.**
- Investigations can **uncover deficiencies** in procedures, training, management practices or draw attention to needed repairs/maintenance.

Respond, Investigate, and Analyze

Benefits of investigating and analyzing incidents:

- Identifying unsafe conditions and behaviors
- Identifying needed organizational changes
- Providing constructive feedback
- Reinforcing best practices
- Prioritizing the safety and well-being of everyone in the organization

Does Your Auxiliary Have Trending Claims?

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AORMA Injury Trends

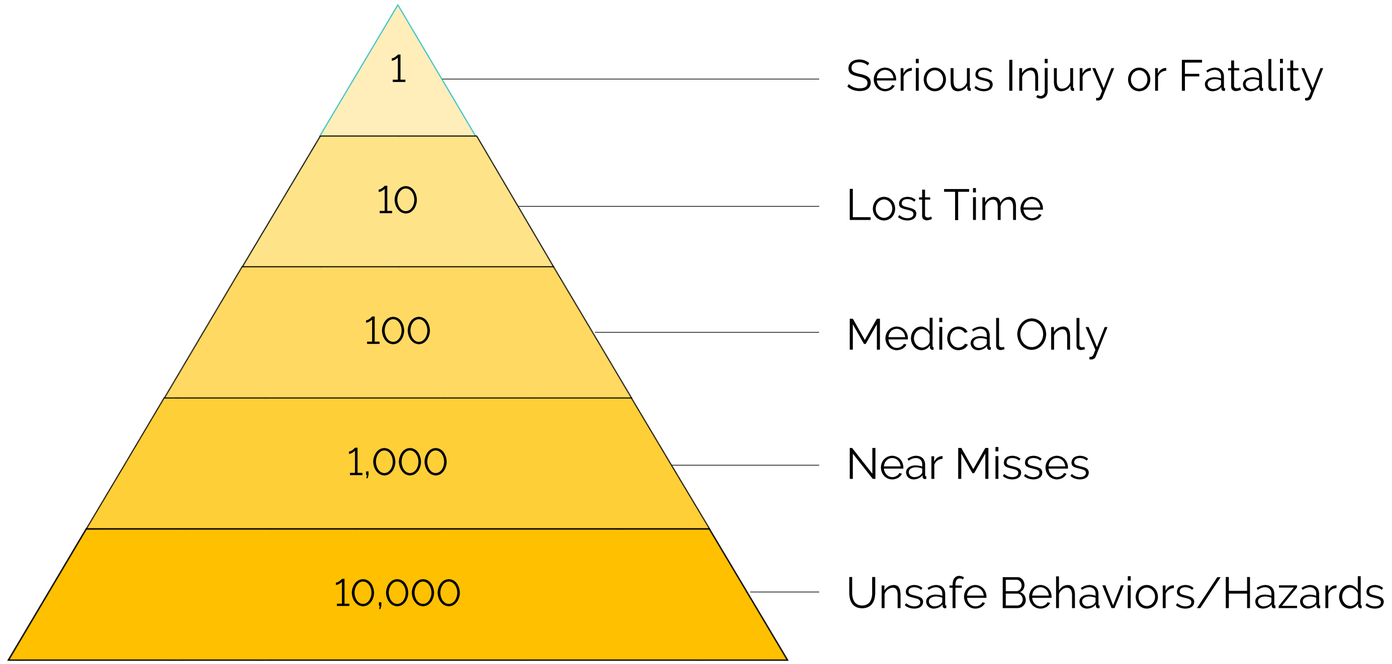
WC Claim Causes over past 5 Policy Years

- 4 of the Top 5 have been in the Top 5 every year
- Top 5 Causes = 79% of all claims
- Top 5 Causes = 77% of current total incurred costs
- Employees between **age of 18-26 = 58% of all claims**

Top 5 WC Claim Causes over past 5 Policy Years

1. Contact with injuries (655)
2. Lifting/Pulling/Strains (240)
3. Slip/Trip/Fall (198)
4. Cuts/Caught In (195)
5. Struck By (160)

The Safety Pyramid: Frequency



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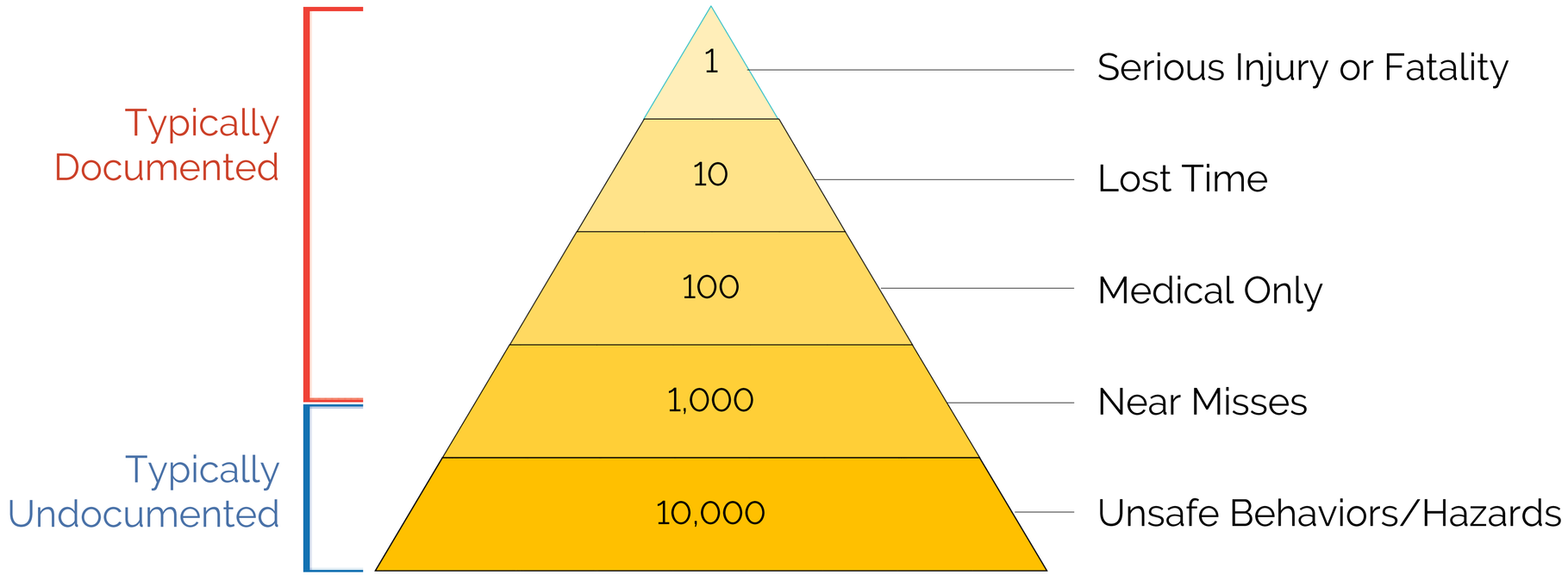
The Safety Pyramid

The Safety Pyramid



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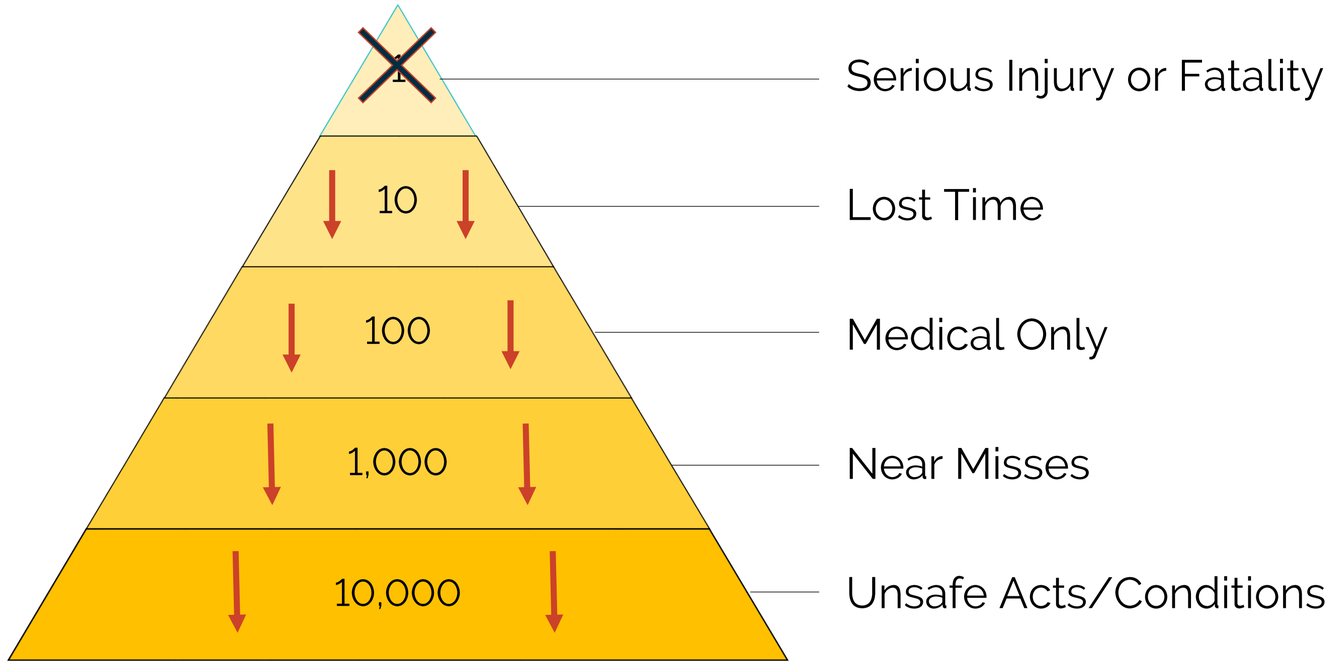
The Safety Pyramid



How to be Successful in your Investigation

How are you doing today?

Why Accident Investigations Fail

- Lack of time to complete
- Lack of motivation to complete
- Lack of accountability
- Lack of skills & knowledge
- Investigation stopped short and didn't reveal all causes of the accident
- Report does not include corrective actions

Pre-Accident Planning

Clearly defined roles and responsibilities

Training of key staff members

Communications established

Standard procedures established

Necessary equipment and forms on hand

Organization Preparation

Make sure that your organization is prepared:

- **Implement effective and reliable methods of communication** throughout your facilities.

- **Create contingency plans that cover what to do**:
  - If managers or supervisors are unavailable.
  - If primary communication channels fail.

- **Train employees:**
  - To properly report incidents **and near misses.**
  - To recognize and respond to emergencies.
  - To follow safe practices and proper procedures at all times.
  - Ensure investigators are **trained** on process

Determine internal procedures to be followed during all investigations.

The Investigation

Investigation Guidelines

- **Include both management and employees in the investigation**. Multiple perspectives are invaluable.
- Make sure that the investigation team includes or has **access to technical expertise** in safety, engineering, operations, or any other subjects that might be helpful.
- **Focus on finding causes** for the issue rather than placing blame.
- **Collect as much data as possible**. The more information you have, the easier it will be to see the big picture.
  - Interview personnel involved in the accident, as well as any witnesses.
  - Document the site of the incident. For example, take photographs or video.

Initial Incident Response

1. **Secure the area** if necessary to prevent further injury or disruption of evidence.
2. **Control or eliminate hazards** created in the incident.
3. **Contact the appropriate people** immediately:
   - Management or supervisors
   - Emergency personnel if necessary
4. **Provide first aid** if necessary and able.
5. **Start preserving evidence** that may be needed for the subsequent investigation.
   - Photograph details of the scene before removing any evidence.
   - Take measures to isolate any evidence that may not be able to be removed from the scene (e.g., damaged heavy machinery).

Collecting Data

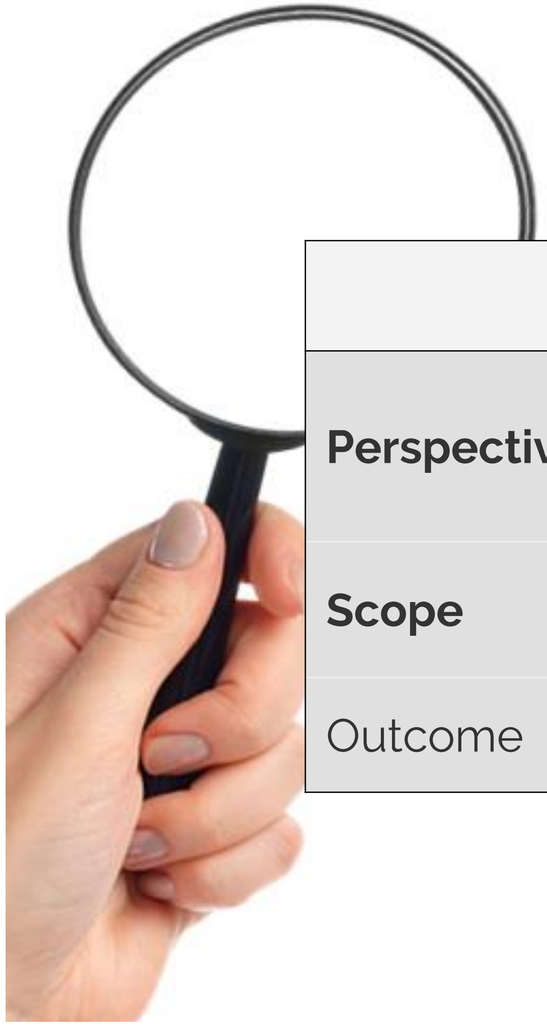
Look for the following information:

- Who was involved, including all witnesses
- The time, date, and location of the accident
- The activities being performed when the accident occurred
- All equipment being used when the accident occurred
- Existing safety policies for the activities and equipment

Information sources:

- Witness accounts
- Photos and evidence collected at the scene
- Surveillance videos
- Maintenance records, work orders, or any other documentation regarding the personnel or equipment involved

Focus on the System



In order to discover root causes, the analysis should be system-focused rather than person-focused.

	Person-Focused	System-Focused
Perspective	Considers the incident to be the **starting point** of the issue and investigation	Recognizes that an incident may be the **result** of an inherent risk in the system
Scope	The direct cause of the incident and its aftermath	The system as a whole: in order to identify risk or failures
Outcome	**Damage control**	**Process control and improvement**

Let's Discuss an Example

John is running through the office kitchen area and falls. The result is a fractured shoulder.

Accident investigation

*Remember the seven **"W"s:***

- **WHAT** happened?
- **WHEN** did it happen?
- **WHERE** did it happen?
- **WHAT** caused it to happen?
- **WHO** was affected?
- **WHY** did it happen?
- **WHAT** can be done to prevent re-occurrence?

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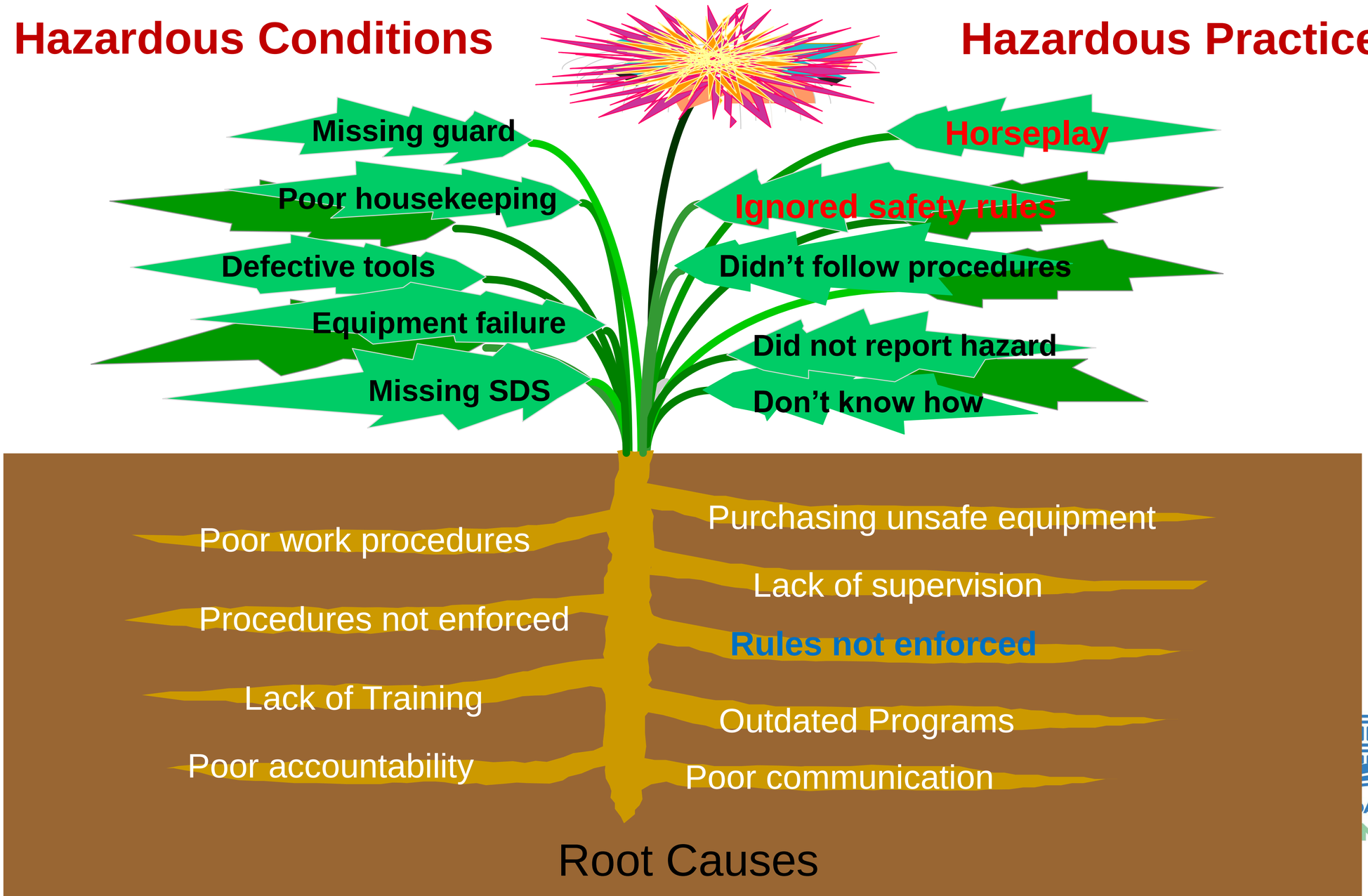
The “Accident Weed”



Interview Techniques

- Conduct interviews in private.
- If possible, conduct interviews close to the scene of the incident.
- Plan the questions ahead of time but allow the subject's answers to guide what is asked next.
- Do not make assumptions about what you expect the answers to be: keep an open mind.
- Ask open-ended questions, allowing the subject to tell the story in their own words.
- Ask **who-what-when-where-why-how** questions.
- Do not interrupt or try to assist with an answer.

Reviewing Pertinent Documents

- Standard Work Practices
- Job Safety Analysis
- SDS use
- Training records
- Maintenance Logs
- Past Accident History
- Inspection Records
- MVRs

Develop the Sequence

- Analyze the accident by breaking down
  - Events prior to accident
  - Events during
  - Events immediately after

- Identify gaps in your timeline and gather additional facts and information as needed.

Let's Discuss an Example

- What was John doing just prior to falling
- What were conditions at time of John's fall
- What occurred after John's fall

Determine the Causes

- **Direct Cause** – The immediate source of the accident, often quickly identified
- **Indirect Cause** – An unsafe action or condition
- **Root Cause** – Policies, decisions, workplace or employee factors

"Accidents usually **result from multiple and interacting causal factors** that may have organizational, cultural, technical or operational systems origins. If accident investigations do not relate to actual casual factors, corrective actions taken will be misdirected and ineffective." (Manuele, 2011)

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Ishikawa (Fishbone) Diagrams

Tailor the categories to best fit the environment you are working in.

Common examples:

5 M's for manufacturing:

- Machines
- Method
- Material
- Manpower
- Measurement

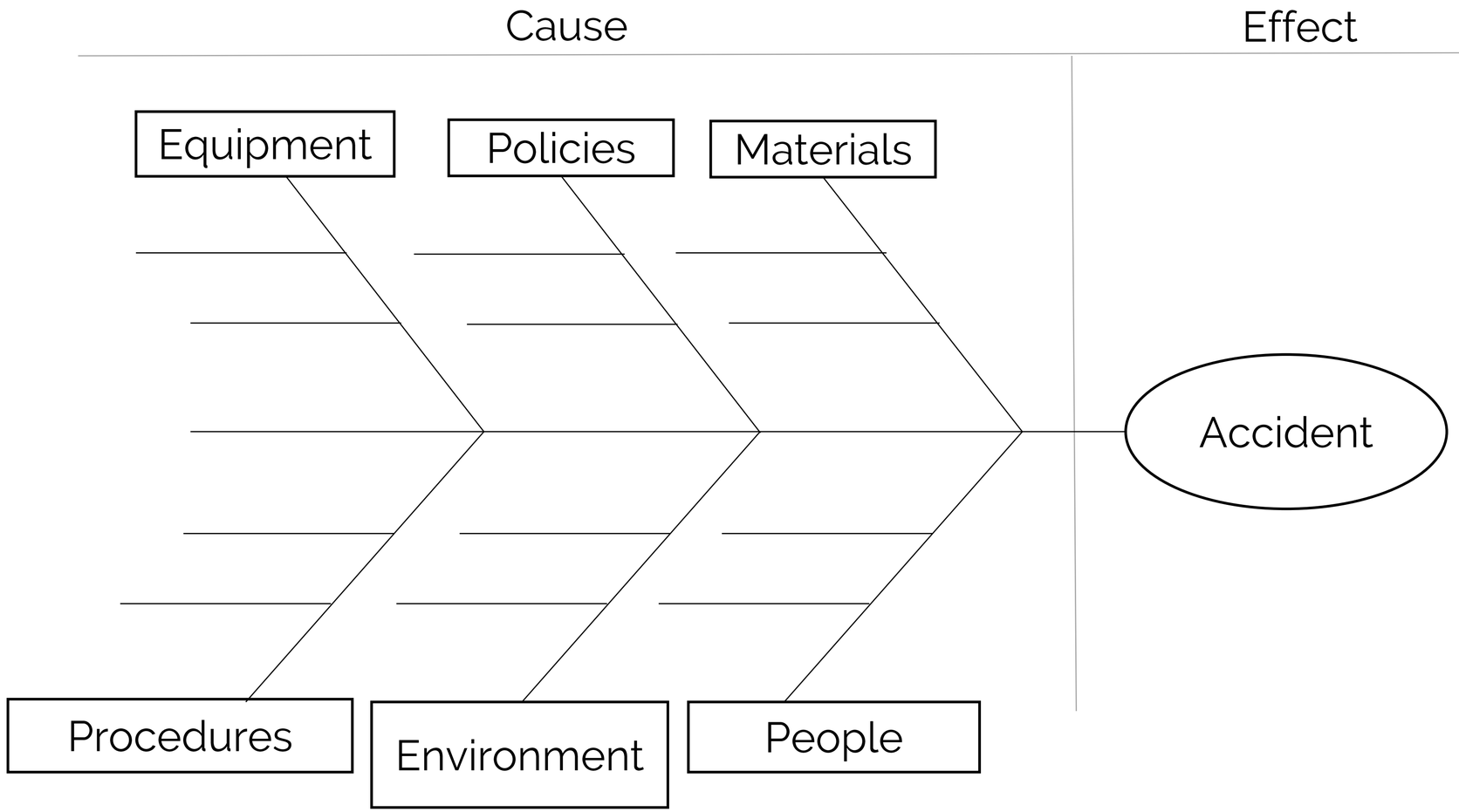
5 S's for the service industry:

- Surroundings
- Suppliers
- Systems
- Skills
- Safety

6 P's for office environments:

- People
- Process
- Policy
- Plant
- Program
- Product

Process for collecting Causes: Fishbone Diagram



The Report

Document

- **Document** details (photos or drawings too)
- **Identify** possible causes for unsafe conditions or unsafe practices
- **Develop** an analysis of what happened, how it happened, and how it could have been prevented
- **Determine** what caused the ***situation*** itself, ***not just the injury***
- Include names and contact information of witnesses.

Accident

- *Employee working in warehouse slipped and fell while walking through warehouse.*
- *Resulted in fractured leg and significant lost work time.*

Keep asking <u>why</u>:

- *Why did the employee slip?*
- *Why was there oil on the floor?*
- *Why did the forklift leak?*
- *Why wasn't the forklift maintained?*

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Be specific:

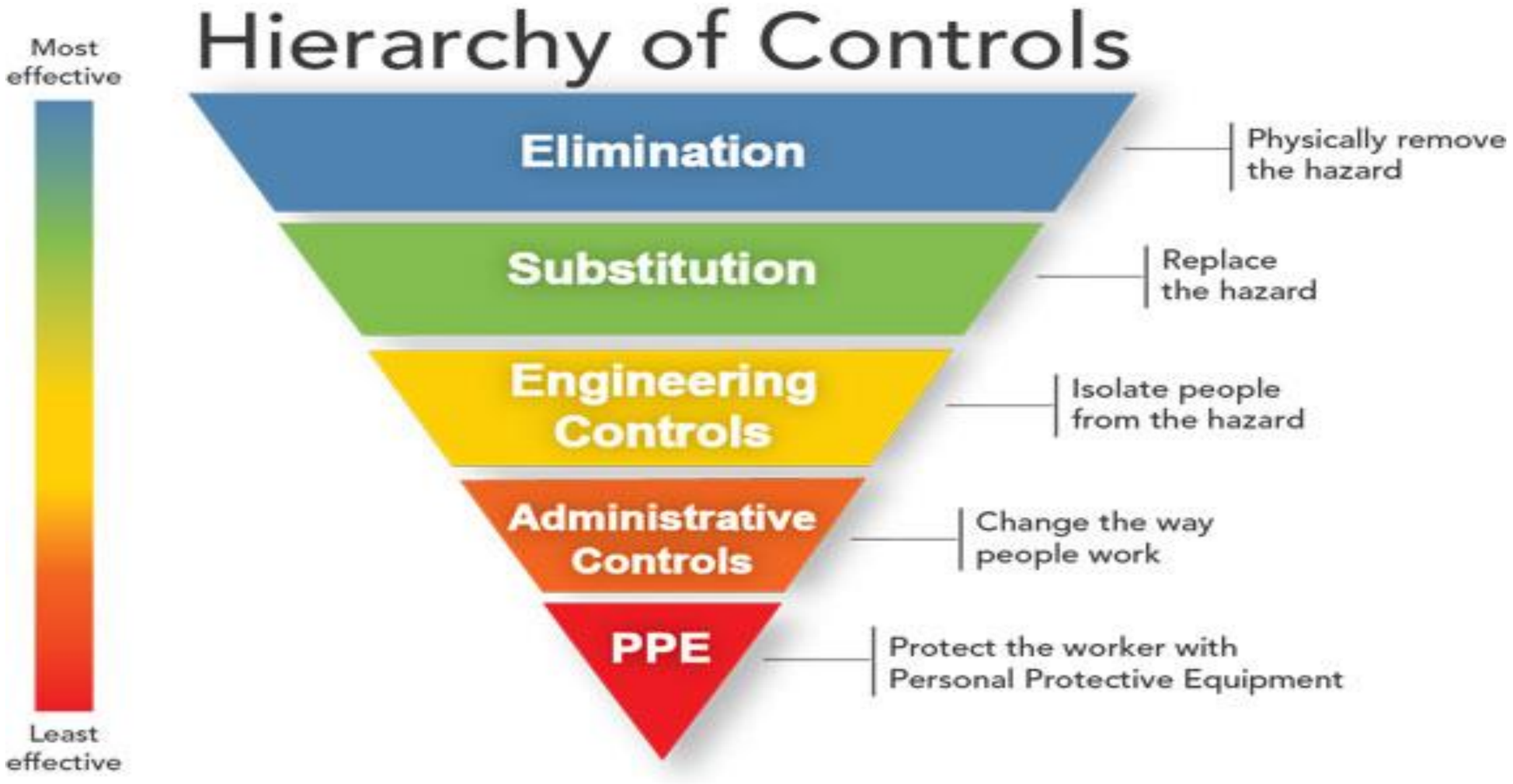
“The forklift was not serviced so it leaked oil on the floor and an employee slipped in it.”

“The employee was late so he didn’t get the ladder and stood on the desk, which could not support his weight and collapsed.”

Correcting the Cause

- Control(s) must directly address each cause identified
- Consider short term controls if permanent controls are not readily available
- More than one control may be needed
- Use the “Control Approach” to make sure that the “best” control has been found

The Control Approach



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Fixing the problem

Change procedures:

- ✓Job redesign
- ✓Pre-job planning
- ✓Improve procedures
- ✓Maintenance program

Fixing the problem

Administrative Controls:

- ✓ Job rotation
- ✓ Training or re-training
- ✓ Improved supervision
- ✓ Employee selection
- ✓ Safety inspections

The Report & Recs

- Document facts only
- Determine if the corrective action applies to more than one employee, job function, shift, etc.
- Prioritize corrective actions based on future accident potential
- Submit both short term and long term solutions, if necessary

PART III – Cause

A. Describe any **Unsafe Acts**: N/A

B. Describe any **Unsafe Conditions**: N/A

C. Fundamental **Cause of Incident**: Employee wasn't holding onto the keg tight enough

(TURN OVER AND COMPLETE THE OTHER SIDE)

PART IV – Corrective Action

Immediate Action Taken: Employee no longer works for Dining Services. No corrective action needed.

What is recommended to

Call to Action

- Review your current process to report near misses and hazards
- Review your current accident reporting process (responsibilities, documentation)
- Review the readiness of your accident investigation team
- Review recent incident/accident report (were causes and corrections identified and completed)

WHO IS MY ALLIANT RISK CONTROL RESOURCE?

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	Fullerton	San Bernardino	San Francisco	Monterey
	Long Beach	San Diego	San Jose	Sacramento
	Los Angeles	San Marcos		San Luis Obispo
				Sonoma
				Stanislaus

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Thank you