

Accident and Incident Investigation for Level 1 Incidents

1. Introduction

This quick guide provides some tips on how to do an investigation for Level 1 incidents. It is important for all accidents and incidents to be investigated promptly to prevent them from happening again. Investigation of accidents and incidents should be done in a systematic manner, in order to find out the root and casual factors that contributed to the accident and subsequently determine corrective and preventive actions.

2. Investigating the Incident

Step 1: Determine the Incident Level (Done by the OSHE Administrator)

1. The severity level of incident will determine the composition of the investigation team. The OSHE administrator will assign the severity level of the incident based on the criteria described in the [Accident and Incident Reporting and Investigation Standard](#).

Step 2: Investigate the Incident (Done by the Department)

Details of the incident can be obtained through interviews with witnesses, observations of the incident scene, photographs, videos, etc.

1. For Level 1 incidents, the investigation team is typically made up of the Principal Investigator/Supervisor¹ (lead investigator), the safety lead and laboratory member. Where necessary, the lead investigator should recruit relevant staff (e.g. safety and health officer, safety and health coordinator, technical expert, etc.) into the investigation team.

¹**Supervisor** refers to the Reporting Officer of a staff member in an administrative department

2. Investigators have to complete 'Incident Details' and 'Incident Assessment Report Form' in the Accident and Incident Management System (AIMS). Step 2 in this quick guide will help you complete the fields required in AIMS.

Incident details ?

Sequential Description of incident:

Refer to Step 3

Incident Assessment Report Form

Summary assessment:

Refer to Step 4

3. List down the chronological sequence of events leading to the incident and take note of the hazards/unsafe condition (equipment, substance, material)/unsafe act which have caused the incident. Complete details of the incident will help with conducting a root cause analysis. **[Incident details in AIMS]**

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4. Use the 5-WHY Method (Figure 1) to determine the root cause and causative factors

The 5-WHY method basically employs asking 'WHY?' repeatedly to explore the cause-and-effect of each layer of symptom underlying a problem. The main aim of using this technique is to ask 'WHY?' until you reach the root cause of the problem. [\[Incident Assessment Report Form in AIMS\]](#)

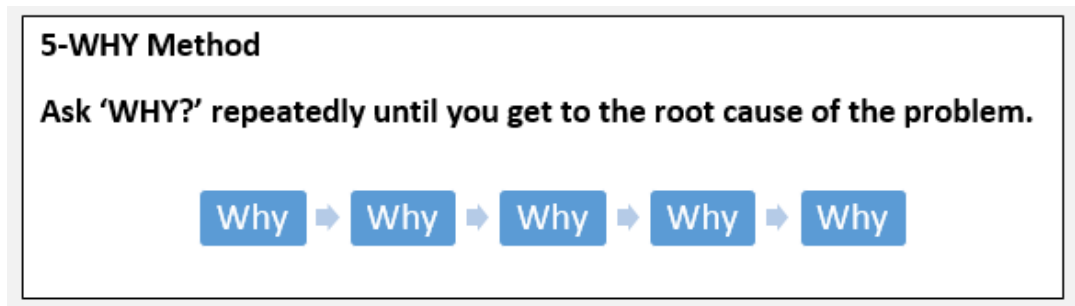


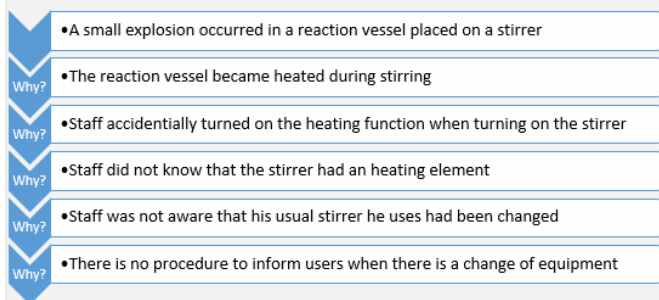
Figure 1: 5-WHY Method

These are some questions you can also consider while conducting the 5-WHY method:

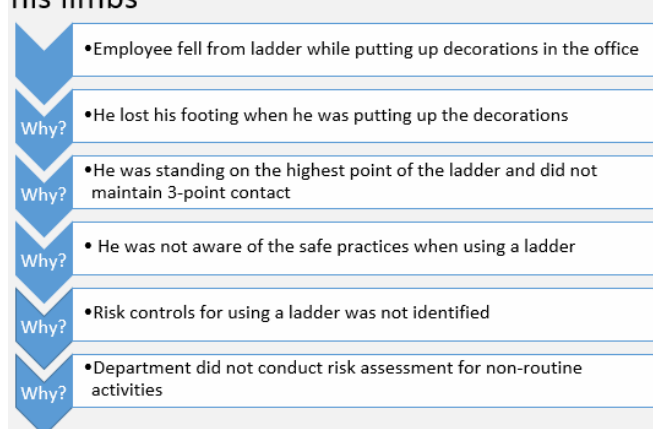
- a. Why was there an incident/unsafe act/unsafe condition?
- b. Why did he not follow established procedures?
- c. Why was risk assessment (RA) not done for the procedure?
- d. Why did he not attend the necessary OSHE/Department/Laboratory training?

Sample Root Cause Analysis Using 5-WHY Method

❶ Explosion on bench top



❷ Employee fell from ladder and sprained his limbs



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Step 3: Identify Possible Corrective Action and Preventive Action (CAPA) Measures

Corrective¹ and preventive² measures have to address the root cause(s) identified. These are not compulsory for L1 incidents but are useful to have to prevent recurrence of the incident.

¹**Corrective measures** are actions to prevent a recurrence of the incident. It aims to eliminate the cause of a detected non-conformity.

²**Preventive measures** are actions to prevent an occurrence of an incident. It aims to eliminate the cause of a potential non-conformity.

Some areas that CAPA should address:

1. Corrective Action:

- a. Does the risk assessment need to be revised and updated?
- b. Is the person competent to perform the task?

2. Preventive Action:

- a. Is there a process of risk assessment for all activities?
- b. Does the risk assessment take into consideration abnormal situations such as maintenance, repair, change of user profile (senior researcher to undergraduate), etc.?
- c. Is there a procedure to ensure the competency of all new users of the equipment, procedure, material?

3. Timeline

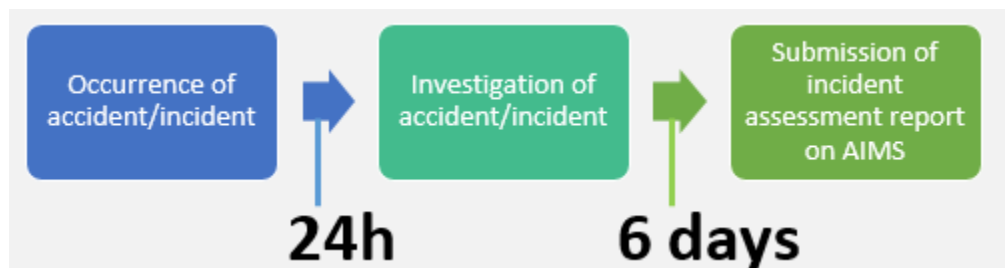


Figure 2: Timeline for investigation and submission of incident assessment report on AIMS

4. References

- 4.1. [NUS Accident/Incident Reporting and Investigation Standard \[PDF\]](#). (2018, March 26). Singapore: NUS Office of Safety, Health and Environment.
- 4.2. [Workplace Safety and Health Guidelines: Investigating Workplace Incidents for SMEs \[PDF\]](#). (2013). Singapore: Workplace Safety and Health Council.
- 4.3. [M. S. How to Use the 5 Whys for Root Cause Analysis \[PDF\]](#). Lifetime Reliability Solutions.