

## **Evaluation on the Effectiveness of eSAFER Form as Hazard and Near Miss Reporting Method**

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**Abstract:** Numerous cases of hazard and near miss have been reported in Malaysia, ranging from different types of industry. Few methods are available in reporting hazard and near miss and one of the methods is by using See and Fix Error Report (SAFER) Card. SAFER Card gives the awareness about unsafe condition and unsafe act among workers that can cause hazard and near miss at the workplace and workstation. SAFER Card used as a report card to report if there any hazard or near miss at the workplace. In this study, a digital reporting method of hazard and near miss reporting by using online platform was introduced, known as eSAFER Form. Digital reporting method i.e. eSAFER Form was developed due to inconsistent monthly hazard and near miss reporting was recorded using previous hand-writing SAFER Card. The implementation of eSAFER Form began starts proposing this method to the management team for approval. Then the questionnaires using google form was developed before distributed for trial run of eSAFER Form. For the effectiveness of eSAFER Form implementation, workers from all departments were briefed and trained to ensure they aware and know on how to report hazard and near miss via eSAFER Form. After that, workers start to report hazards ad near miss via eSAFER Form and the data from eSAFER Form was collected after a month and then was analysed to investigate the effectiveness of eSAFER Form. From the data analysis, it shows an improvement after applying eSAFER Form except one department. Another department show an impress improvement by increasing higher than the target set. Furthermore, the department that did not achieve the target before implementing previous eSAFER Form has exceeded the target. This achievement above the target shows good feedback after implement eSAFER Form and also

indicate the comfort among workers to use the new eSAFER form. An average for the target of hazard and near miss report is 32 reports, in which need to be submitted by monthly in a year. Comparing to eSAFER form, hazard and near miss report after implementing this new reporting method is 43 reports in a month. In conclusion, using eSAFER Form to report hazard and near miss at workplace is effective. However, this study can be improved by collecting the data for a longer period, ranging from 6 to 12 months.

**Keywords:** Hazard and Near Miss Reporting Method

## 1. Introduction

Safety awareness is very important among workers. Safety awareness is a starting point to prevent any accidents at the workplace. In the past, safety was sometimes viewed as an afterthought to manufacturing. Today, it is widely recognized that effectively managing safety issues contributes to an organization's financial viability and demonstrates a dedication to an organization's most precious asset which is its people. The first step in preventing an accident is to raise safety awareness. Safety awareness is a duty, a commitment, and a responsibility. It's all about common sense, teamwork, and following safe work rules. It's recognizing risks and demonstrating a willingness to act to mitigate any risks that may exist.

At work, there is no such thing as being too safe. Increased demand for skills, products, and services opens the door to greater hazards and risks, endangering everyone's safety in the workplace. Developing and executing workplace safety procedures is one method to mitigate these hazards and risks. Most safety specialists, on the other hand, feel that raising worker safety knowledge is the only method to ensure the effectiveness of safety programs. Being hyper alert has been shown to reduce the likelihood of workplace accidents, injuries, and diseases.

Any workplace dangers should be reported right once to management, the safety department, or a supervisor. Every employee should be made aware that this is the proper course of action to take should they come across any hazards or possible hazards they may discover. This is a normal practice that ought to exist in every workplace. However, many workers might believe that reporting the risks they come across, often daily, is unnecessary because they are just the way things are. Hazard reporting is also essential for the safety of workers, in addition to incident and near-miss reporting, which are both crucial.

Safety, health, and welfare of workers is priority at any industry. There is a lot of hazard and reporting method in a variety of industry. One of the methods is by using See and Fix Error Report (SAFER) Card. Besides, SAFER Card gives the awareness about unsafe condition and unsafe act that can cause hazard and near miss at the workplace and workstation. SAFER Card used as a report card to report if there any hazard or near miss at the workplace. Safety awareness amongst workers was significance in early implementation of SAFER Card. Until recently, the trend of raised SAFER Card were found very not significance among the workers.

## 1.1 Problem Statement



**Figure 1: 5W Diagram of Problem Statement**

Based on Figure 1.1 it shows that main problem here is inconsistent hazard and near miss report by using SAFER Card. Inconsistent data for hazard and near miss reporting using SAFER Card is because employees did not raise and fill up the SAFER Card to report any hazard and near miss around them. There are a few reasons on why employees did not report any hazard or near miss at the workplace. First reason is because workers consider that they take too much time to raised or fill up the SAFER Card to report any hazard or near miss occurred. Another reason why inconsistent hazard and near miss report using SAFER Card is because SAFER Card's boxes are far from the workstation. Workers need to get the SAFER Card at the boxes and that movement sometimes make them feel burden.

## 1.2 Objectives

This study embarks on three distinct objectives as follow:

1. To analyse the collected responses the usage of old method to report hazard and near miss by using survey question in preliminary study.
2. To develop and implement a digital platform method to report hazard and near miss at the workplace.
3. To investigate the effectiveness of using new method to report hazard and near miss at the workplace.

## 2. Literature Review

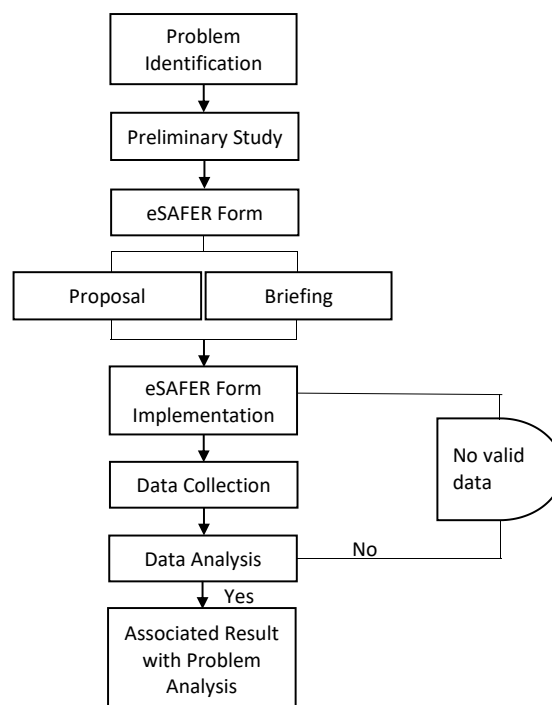
The term hazard has a lot of different meanings. Frequently, dictionary do not provide detailed meanings or mix the phrase with "danger". For instance, one dictionary defines hazard as "a danger or risk", which explains why many individuals confuse the two concepts. Any source of possible damage, harm or adverse health effects on something or someone is considered a danger. A hazard is essentially the possibility of injury or a negative impact. As example, to people as health effects, to organizations as property or equipment losses or to the environment [1]. The goal of hazard identification is to draw attention to key operations of tasks, or those that pose serious risks to the health and safety of workers. It also aims to draw attention to risks that may exist with respect to specific pieces of equipment because of its energy sources, usage, or other factors [2]. Hazard identification issues and a lack of safety

awareness can result in disastrous safety mishaps. According to previous studies, there are a great number of safety dangers that go unnoticed. Furthermore, one of the most common issues is the underestimating of hazard identification and safety awareness. To increase safety performance, a thorough understanding of workplace elements that influence hazard detection and safety awareness perception is required [3].

Systems for reporting incidents and hazards have been widely adopted in industries with a history of strong safety management, including aviation, nuclear power, and petrochemical manufacturing [4]. The fear of disciplinary or legal action because of the report, the perception that the report is worthless, the failure to recognize that a reportable incident has occurred, and the time and effort required for reporting are all barriers to incident reporting that have been reported in a number of studies [5]. Studies have revealed that there are a variety of reasons why incident reporting systems are typically underutilized, including apprehension about liability or legal action, increased burden, forgetting to report an occurrence, and a belief that incident reporting is not helpful. A strong incident reporting system is the foundation of safe procedures and aids in the development of a safety culture inside enterprises. Systems for reporting incidents are created to collect data on safety, which can then be used to improve individual or organizational learning. Additionally, reviewing incident reports can assist in the development of new policies and procedures to lessen the probability of repeating previous problems [6].

### 3. Methods

In the research framework below outlines the steps involved in achieving the specific objectives. Start with the problem identification and continue with the preliminary study to get the confirmation on the objectives decided based on the observation. eSAFER Form implementation starting with proposal to the management team and continue briefing to all employees. Data will be collected to analyze and ensure it meet the main objectives of this research.



**Figure 2: Research Framework**

### 3.1 Data Collection

Data will be collected for a month after eSAFER Form implementation. Data for a month was collected to see the progress of hazard and near miss reporting after implement the new system. Is that getting better or getting worst. It's all depending on the data in a month after implementation of eSAFER Form. All the submitted report will be automatically recorded into spreadsheet to make it easy to update and analyses for the future action.

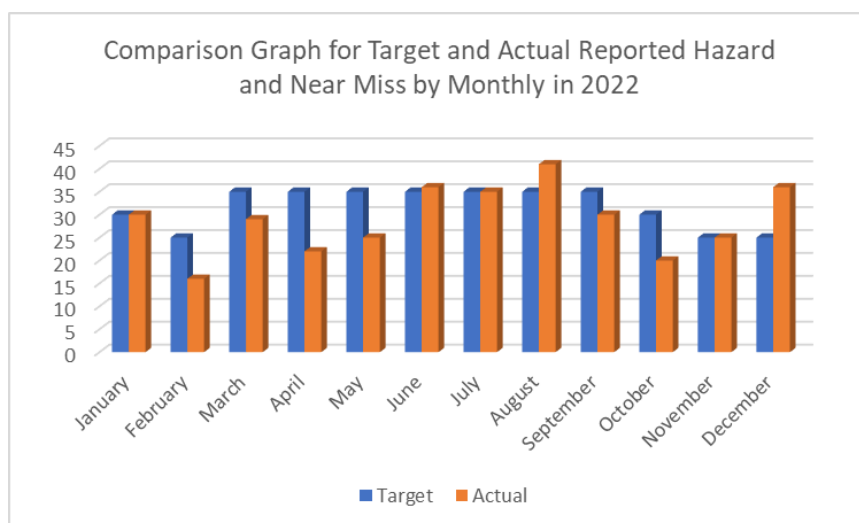
### 3.2 Data Analyze

Data will be analyze based on the collected data in a month starting from first day of implementation of new system. Data before and after implementing new system will be compared to show if there any differences before and after. From that comparison, it can be decided either by using new method is more convenient or the old method is still the best. There are a few criteria that will be compared to indicate which method is better. Data for overall reported hazard and near miss in a year will be compared to see the comparison between target and actual reported hazard and near miss reported. From this data we can see if there any different for a month after applying the eSAFER Form or it still the same. Next, reported hazard and near miss by department will be compared to see if there any improvement for each department in reporting hazard and near miss after implementing new method or it still as before. To know the accurate answer, data by week for after and before implementing new method will be analyzed and discussed. From the analyzed data, it can conclude that either eSAFER Form need to be continue or just use the old method for hazard and near miss reporting like before.

## 4. Results and Discussion

The result and discussion section presents the findings of this study and the result of data analysis. All data was obtained in a month before and after applying a new method of hazard and near miss reporting.

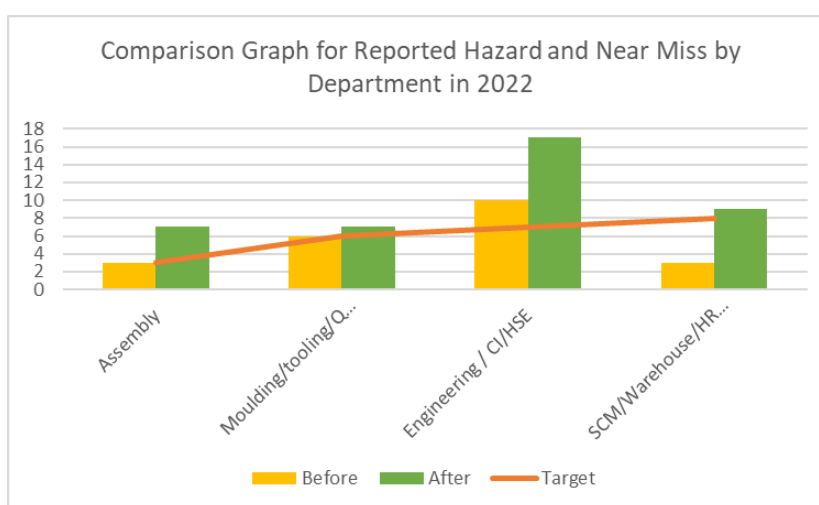
### 4.1 Monthly Target and Actual



**Figure 3: A Comparison Graph for Target and Actual Reported Hazard and Near Miss by Monthly in 2022**

Figure 3 show the graph of monthly target and actual number of reported hazard and near miss from January until December. From the table, can see that there's a few months that not achieve the target which is February, March, April, May, September and October. This can be concluded that first half in a year have more months that do not achieve the target compared to the second half in a year. However, eSAFER Form start implement on second half in November until December. So, it might give an effect to the data a little bit. Besides, from the graph can be see that only three months in a row achieves the target which is on June, July, and August after four months in a row not achieves target. From this trend, it can be concluded that hazard and near miss reporting achieved target after getting the refreshment training and reminder from leader of each department. However, it just stays for three months and start back to previous month that not achieved target.

#### 4.2 Comparison by Department

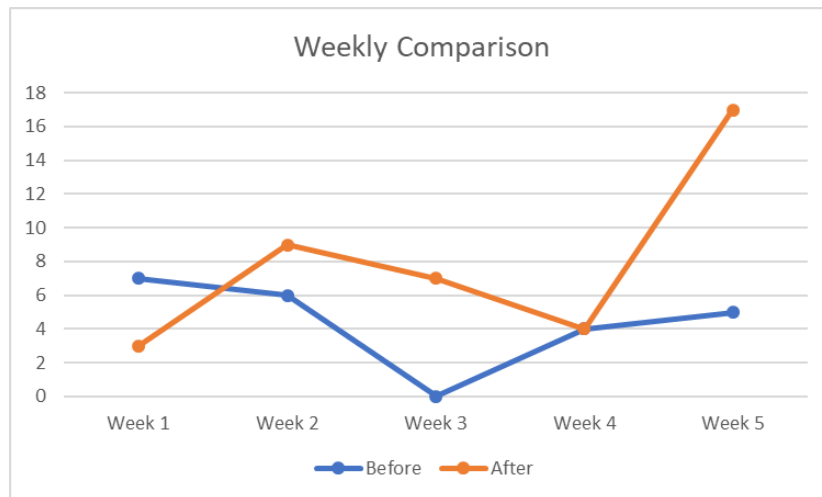


**Figure 4: A Comparison Graph for Reported Hazard and Near Miss by Department in 2022**

From the Figure 4, can be conclude from the graph that only one department did not achieve target for reporting hazard and near miss before implement eSAFER Form. Although the graph shows that only one department did not reach the set target, but the other departments only reached the target and only one department exceeded the set target. This can be said that workers just report any hazard and near miss just to achieve the target not as a responsibility to ensure workplace safe from any hazard and near miss. However, the graph shows an improvement after applying eSAFER Form. Only one department not showing too much improvement compared to before implement eSAFER Form. Another department show an impress improvement by increasing higher than the target set. Furthermore, the department that not achieved target before implement eSAFER Form has reached the target and even exceed the target set. This shows good feedback after implement eSAFER Form and this also shows that most department feel comfort to use the new method compare the old method.

It can be said that total percentage of reported hazard and near miss after implementation of eSAFER Form highest with 46% compared to reported hazard and near miss before implementation with only 26%. This mean there was 45% improvement has been done by all department in reporting hazard and near miss after implementing new method. Besides, total reported hazard and near miss after implementation new method are further far away from the target set with only 28%. Means that, there is 40% improvement from the target set and it is a good achievement since it can be upper than target set. This can be used as prove that all workers excited and comfort to use new method compared to old method to report any hazard and near miss around them.

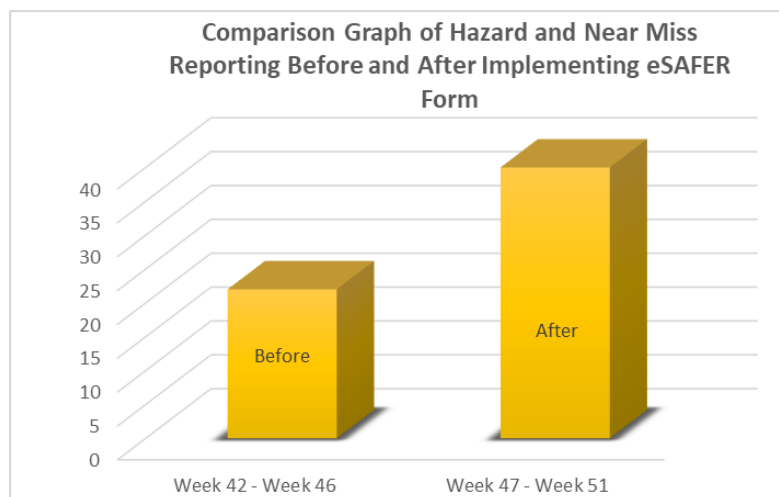
### 4.3 Comparison by Week



**Figure 5: The Graph of Weekly Comparison for Reported Hazard and Near Miss**

Figure 5 show the comparison graph of hazard and near miss reported by week. Week 1 represent week 42 before implement eSAFER Form and week 47 after implement eSAFER Form and until week 5 represent week 46 before implement eSAFER Form and week 51 after implement eSAFER Form. From the graph above, it shows that there’s a lot of improvement can be seen by weekly. As we can see, after implement eSAFER Form, most of the week reported hazard and near miss are over than numbers of reported hazard and near miss before implement eSAFER Form. This can be concluded that, implementation of eSAFER Form give a good impact to the hazard and near miss reporting.

### 4.4 Comparison Before and After Implement eSAFER Form



**Figure 6: A Comparison Graph of Hazard and Near Miss Reporting Before and After Implementing eSAFER Form**

From Figure 6, the graph of comparison before and after implement eSAFER Form show a very clear improvement change. Data for week 42 until week 46 (before implementation) shows only 22 hazard and near miss being reported. While, for week 47 until week 51 (after implementation) shows 40 hazards and near miss being reported. This can be seeing an increasement after applying a new

method for hazard and near miss reporting. From the result, it shows a positive improvement after implement eSAFER Form.

## 5. Conclusion

In conclusion, positive improvement after the implement new method of hazard and near miss reporting. In addition, average for the targeted hazard and near miss report is 32 reports need to be submitted by monthly in a year. Meanwhile, hazard and near miss report after implement eSAFER Form is 43 reports in a month. This can be concluded that using eSAFER Form as a new method to report hazard and near miss at workplace was effective. Besides, the analyzed by compare the before and after implementation showed the differences trend and it was a positives trend that need to be kept. This can be concluded that the implementation of eSAFER Form as a new method for Hazard and Near Miss Reporting is successful and impressive.

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