

Filling the Gaps of the Workplace First Aid Assessment by considering the Guidelines on Occupational Safety and Health, Malaysia

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ABSTRACT

Objective: This is a conceptual paper to suggest the arrangements of adequate first aid services in case of injury or illness by integrating the existing guidelines of occupational safety and health (OSH) in Malaysia.

Discussion: The Occupational Safety and Health Act (OSHA) 1994, provides the legislative framework to promote, stimulate and encourage high standards of safety and health at work. Due to the self-regulation schemes applied under this act, OSH relevant guidelines have been introduced to tackle different OSH issues at the workplace. Two of the guidelines discussed in this paper are Guidelines for Hazard Identification, Risk Assessment and Risk Control (HIRARC) (2008) and Guidelines on First-Aid in the Workplace (2004). The gaps exist as how to complementary two existing guidelines to enhance the first aid assessment at the workplace.

Conclusion: In summary, this paper recommends on the necessary to conduct a comprehensive workplace first aid assessment and suggests to a detailed curriculum which could help the first aider at the workplace competencies to provide care while considering the workplace hazards.

Keywords: *Gaps; Workplace first aid; Guidelines; HIRARC; OSH issues*

1. Introduction

Following the industrial development and economic growth, occupational injuries are one of the most important issues within the workplace in Malaysia. The Occupational Safety and Health (OSH) Act (1994) is thus enforced among employer and OSH practitioners in order to secure the safety, health and welfare of persons at work and to protect them against risks to safety and health issues in connection with their activities perform at the workplace. This act is based on the self-regulation approach, therefore,

the primary responsibility to ensure the safety and health at the workplace lies with those who create the risks (employer) and those who work with the risks (employees).

Non-permanent Disability (NPD) is the curable impairment of the physical body that may impede the affected person from functioning normally unless he or she is under treatment. Most of the NPD cases are expected to be handled with immediate first aid treatment. The statistics by the Department of Occupational Safety and Health (DOSH) on investigating fatal occupational accidents (classified according to sectors) reported that the manufacturing industry

is among the highest sector, which have increased rate of NPD from 2012 to 2014, followed by agriculture and construction sector. A surprising trend was also observed where there is 75% & 14% increase of NPD cases from the year 2012 to 2014 reported by hotel and restaurant and wholesale and retail trade, respectively (Table 1).

According to American Heart Association (AHA) (Markenson et al., 2010), first aid is defined as the assessments and interventions that can be performed with minimal or no medical equipment. A first aid provider is defined as those with formal training in first aid, emergency care, or medicine who provides first aid. In view of this, first aid treatment at the workplace is the immediate assistance provided to any person suffering from a sudden injury, with care provided to preserve life, prevent the condition from worsening, and/or promote recovery.

Shock, bleeding, burns, fractures and soft tissue injuries, poisonings, medical emergencies and distressed employees are among the most common workplace first aid emergencies which might be encountered in the work sectors. The outcome of the occupational injuries depends not only on the severity of the injury, but also providing the appropriate first aid care at the right and timely manner. In fact, a prompt and properly administered first aid care can mean the difference between the life or death, rapid or prolonged recovery, and temporary or permanent disability (OSHA, 2006).

Table 1. Occupational Accidents due to Non-Permanent Disability (NPD) by Sector reported by the year 2012-2014

Occupational Sector	Number of Victims		
	2012	2013	2014
Manufacturing	1,535	1,469	1,510
Mining and quarrying	32	30	43
Construction	98	83	94
Agriculture, forestry, logging and fishing	383	488	441
Utility	86	100	69
Transport, storage and communication	68	84	84
Wholesale and retail trade	63	66	74
Hotel and restaurant	14	19	56

Source: Statistics from DOSH Malaysia (2012-2014)

The combination of good health and productivity of employees is often overlooked by the employers as a means of improving company profitability. Whether an employee works in a high-hazard or low-hazard environment, they face a variety of risks. The hazards and potential risks poses at each work unit are different; therefore, proper workplace first aid training shall vary with the industry, number of

employees, and proximity to emergency care. With the aids of Guidelines for Hazard Identification, Risk Assessment and Risk Control (HIRARC) (2008), one will be able to identify hazards, analyze and assess its associated risks at the particular work unit.

At the same time, employers are also urged to get their employees ready to handle all types of injuries. It is assumed that the injuries suffer by workers are predictable based on the associated risks which identified from hazards at the workplace. Otherwise, the injured employee is handled with delayed treatment or left untreated until an ambulance arrives, which may incur medical costs and lost productivity.

2. Objective

This conceptual paper is intended to fill the gaps of applying the knowledge of occupational safety and health on first aid in the workplace. The objective of this study is to describe the arrangements of adequate first aid services in case of injury or illness by integrating the existing guidelines apply by the occupation safety and health practitioners in Malaysia.

3. Filling the Gaps

It is simple and inexpensive to start a first aid program at the workplace; however, in order to ensure the adequate first aid provisions, employers must first identify their potential problems, assess their requirements, and consult with employees in the process through HIRARC assessment.

Even though the Guideline on First-Aid in the Workplace (DOSH, 2004) sets out certain minimum requirement for first aid program at the workplace, no two workplaces are the same when need to encounter particular work hazards and apply first aid treatment. In other words, it depends upon the type of industry and the specific activities in the workplace to determine the best first aid plan.

According to Markenson (et al., 2010), first aid assessments and interventions should be medically sound and based on scientific evidence or, in the absence of such evidence, on expert consensus. Figure 1 shows a flow chart which helps to conceptualize the necessary of considering workplace hazards before rendering the useful first aid skills. This concept is modified from the First Aid Assessment Flow Chart from OHS Guidelines Occupational First Aid (2013).

Step 1: Identifying the work unit

Firstly, the number of work units is identified for which first aid is required. For work unit which is placed at one location only, such as an office, there is considered as one work unit. Otherwise, the number of work unit is identified based on the job activities, work processes and tools or equipment used.

Step 2: Consider the type of work performed and the nature of hazards

Second, the type of work and the nature of its hazards are identified at each work unit. Two of these factors may influence the possible injuries or illness causes to the employees. For example, employees in an office will have the first aid requirement different from those who work at the production line. The different work unit may have different hazards, depending on the tasks performed, or equipment used. In order to identify the nature of hazards for the work performed at the different work unit, a semi-quantitative method is used as accordance to the Guideline of HIRARC. The likelihood (L) of the particular activity is assessed based on Table 2.

Table 2. Guide to indicate the Likelihood (L) of an Occurrence

Likelihood (L)	Example	Rating
Most likely	The most likely result of the hazard/event being realized	5
Possible	Has a good chance of occurring and is not unusual	4
Conceivable	Might be occur at some time in future	3
Remote	Has not been known to occur after many years	2
Inconceivable	Is practically impossible and has never occurred	1

Source: Guidelines for HIRARC (2008)

The severity (S) of the identified hazards is assessed based upon an increasing level of severity to an individual's health, the environment, or to property. Table 3 below indicates severity, The workplace then will be assigned as low (L), moderate (M) or high (H) based on formula Likelihood (L) x Severity (S) =Relative Risk (R)

Step 3: Identify the potential injuries and their likely causes

Regardless of any injuries which were reported as non-permanent disability (NPD) or permanent disability (PD), the immediate first aid treatment is the crucial steps one should take before the arrival of ambulance or handover to medical doctor. Therefore, the next step is to develop the first aid plan to the particular workplace by identifying the likely injuries and illnesses that might occur and their potential causes.

Table3. Guide to indicate the Severity (S) of Hazard

Likelihood (L)	Example	Rating
Catastrophic	Numerous fatalities, irrecoverable property damage and productivity	5
Fatal	Approximately (1) single fatality major property damage if hazard is realized	4
Serious	Non-fatal injury, permanent disability	3
Minor	Disabling but not permanent injury	2
Negligible	Minor abrasions, bruises, cuts, first aid type injury	1

Source: Guidelines for HIRARC (2008)

Table 4. Example of Risk Matrix used based on the Guide of HIRARC

Likelihood (L)	Severity (S)				
	1	2	3	4	5
1	Medium	Medium	High	High	High
2	Low	Medium	Medium	High	High
3	Low	Medium	Medium	Medium	Low
4	Low	Low	Medium	Medium	Medium
5	Low	Low	Low	Low	Medium

Source: Guidelines for HIRARC(2008)

Table 5. The Common Hazard Tool for Workplace Injury

Hazard	Typical Problems	Typical injury requiring first aid
Manual handling	Overexertion/Repetitive movement	Sprains, strains and fractures
Falls	Falls from heights, slips and trips on uneven surfaces	Fractures, bruises, cuts, dislocations, concussion
Electricity	Contact with electrical current	Shock, burns, loss of consciousness, cardiac arrest
Plant	Being hit by projectiles, striking objects, being caught in machinery overturning vehicles	Cuts, bruises, dislocations, dermatitis, fractures, amputation, eye damage
Hazardous substances	Exposure to chemicals, e.g. solvents, acids, hydrocarbons	Dizziness, vomiting, respiratory problems, burns to skin or eyes
Temperature, UV radiation	Effect of heat from weather or work environment	Sunburn, heat stress, heat stroke, hypothermia
Biological	Allergens, needle stick, exposure to infectious agents	Severe allergic reaction, injuries, skin rash, infection
Occupational Violence	Intimidation, conflict, physical assault	Nausea, shock, collapse, physical injuries

Source: First aid in the Workplace. WorkCover NSW Health and Safety Guide 2001

**Step 1:
Identify the work unit**

**Step 2:
Determine the workplace hazards**

**Step 3:
Identify potential injuries and likely causes**

**Step 4:
Determine the number of workers**

**Step 5:
Determine the number of workers on a shift**

**Step 6:
Consider surface travel time to hospital**

**Step 7:
Consider the special first-aid requirement**

**Step 8:
Review your assessment**

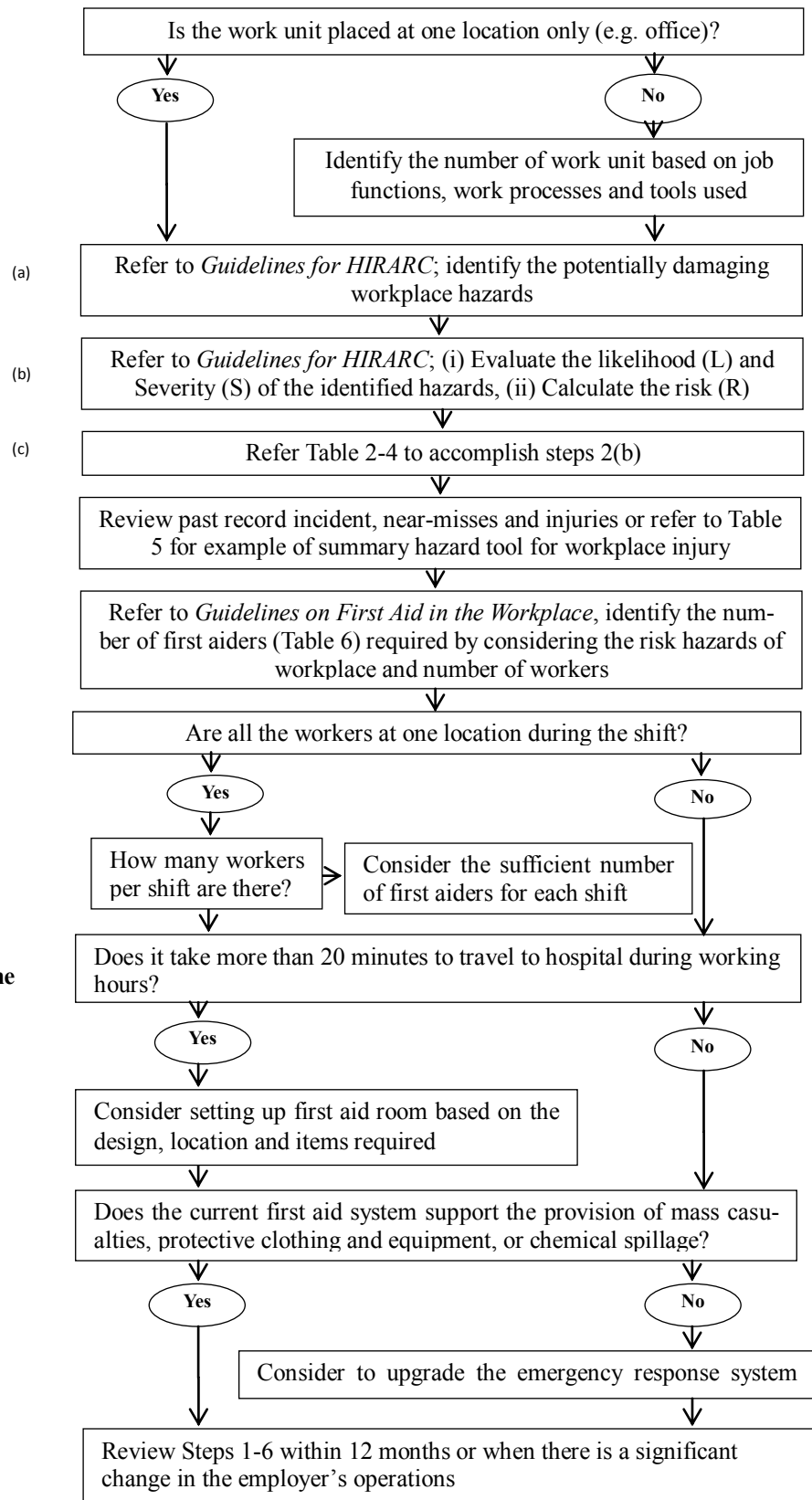


Figure 1. First Aid Assessment Flow Chart

An employer can also review the employees past record on accident, injury, incident and near miss data, consultation with employees, a review of information on material safety data sheet, walkthrough hazard survey at the workplace, or review of incident investigations report to predict the potential injuries and their likely causes.

Table 5 shows the example of common injuries causes by workplace hazards. The potential injuries can be prioritized after considering the result of Step (2) & (3), such that, a work activity which has assessed as “high” risk shall be prioritized with necessary first aid equipment and facilities.

Step 4: Determine the number of workers

Once the workplaces have identified as “low”, “medium” or “high” risk following the result from step (2), the employer shall determine the number of first aiders required which is depends on the number of employees in the workplaces. Table 6 highlights the general guide on the numbers of first-aiders required with respective to their risk and number of workers.

Table 6. General Guide on the Number of First-Aiders Required

Description	No. of Workers	No. of First Aiders
Workplaces with low risk hazards (e.g. office)	Less than 20	One (1)
	21-150	Two (2)
	More than 150	Two (2) for every 150 workers of part thereof
Workplaces with high risk hazards (e.g. chemical plant, shipyards, construction sites)	Less than 20	One (1) per shift
	20 or more	One (1) per shift
Workplaces with more than 400 workers		Two (2) for every 150 workers and a registered nurse or medical assistant employ on site

Source: Guideline on First-Aid in the Workplace (20004)

Step 5: Determine the number of workers on a shift

If there is a shift work schedule, there should be a sufficient number of first aiders to consider for each shift.

Step 6: Consider surface travel time to hospital

The suggestion of 20 minutes is based on the normal time to safely transport an injured worker on a stretcher, having consideration for the weather, road conditions, traffic patterns, and other factors that may affect travel and are likely to prevail during working hours (First aid in the Workplace, NSW, 2001). A first aid room should be con-

sidered to set up, when there are more than 150 employees in the workplace. Or in a particular situation, a first aid room should be prepared where the location of the workplaces is inaccessible to hospital in at least 20 minutes after the incident.

Step 7: Consider the special first-aid requirement

As suggested in the Guideline on First-Aid in the Workplace (2004), the first aid team should consider the necessity of these special first-aid requirements whichever necessary. Such as provision of mass casualties, special instructions under material safety data sheets, protective clothing and equipment and clean up.

Step 8: Review your assessment

It is suggested that employers could review this first aid assessment or whenever a significant change in operations occurs.

5. Recommendation and Conclusion

While further study need to be conducted to determine the effectiveness of integrating HIRARC into workplace first aid assessment in the near future, this conceptual paper hopes to help the OSH practitioner to filling the knowledge gaps when complying OSH regulation and its relevant guidelines. The flowchart suggested above is to guide the OSH practitioner to do a comprehensive first aid assessment related to the duty of care owed to injured or ill worker who expose to damaging hazards at the workplace. Therefore, it is recommended to propose a detailed curriculum identifies the skill training that makes a workplace first aid responder competent to provide care while considering the workplace hazards.

CONFLICT OF INTEREST

There is no potential conflicts of interest persists in this conceptual paper, either to the author, contributor or participants.

ETHICAL ISSUES

No ethical approval is required for this study.

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