



## Assessment Of Hazard Problems In Workplace Related To Emergency Response Plan For Employees In Primary Health Care Centers At Babylon City.

**Hussein Kadhim Abbood**

Occupational Health And Safety Unit / Department Of Public Health / Babylon Health Directorate./ Ministry Of Health And Environment,Iraq

Author Correspondence: [Husseinhasnawi4@gmail.com](mailto:Husseinhasnawi4@gmail.com)\*

**Abstract.** *The study titled " Assessment of Hazard Problems in Workplace Related to Emergency Response Plan for employees in Primary Health Care centers at Babylon City." explores the significance of workplace safety through the implementation of occupational safety policies and regular inspections. The primary research question addresses whether the emergency response plan (ERP) in these healthcare centers is genuinely effective or merely a formality, highlighting that employees lack sufficient information about the ERP. The study aims to evaluate workplace risk problems, including fire alarm systems, emergency exits, regular employee check-ups, and medical waste disposal. Conducted between January 2 and March 30, 2018, in Babylon's primary healthcare centers, this descriptive quantitative study utilized a specially developed assessment tool and data collection through a quarterly supervisory form. Key findings indicate that 85% of the surrounding environment is suitable, 46% of sanitation systems are adequate, 96% of fire extinguishers are available, and 52% of emergency exits are accessible. Recommendations emphasize enhancing employee training on the ERP, conducting regular safety system inspections, and raising awareness of occupational safety's importance among staff.*

**Keywords:** Occupational safety, Emergency response plan, Primary healthcare centers, Workplace risk assessment, Employee training.

**Abstrak.** Penelitian berjudul “Pengkajian Masalah Bahaya di Tempat Kerja Terkait Rencana Tanggap Darurat pada Karyawan di Puskesmas Primer Kota Babel.” mengeksplorasi pentingnya keselamatan di tempat kerja melalui penerapan kebijakan keselamatan kerja dan inspeksi rutin. Pertanyaan penelitian utama adalah apakah rencana tanggap darurat (ERP) di pusat-pusat layanan kesehatan ini benar-benar efektif atau hanya sekedar formalitas, dan menyoroti bahwa karyawan tidak memiliki cukup informasi tentang ERP. Studi ini bertujuan untuk mengevaluasi masalah risiko di tempat kerja, termasuk sistem alarm kebakaran, pintu keluar darurat, pemeriksaan rutin karyawan, dan pembuangan limbah medis. Dilakukan antara tanggal 2 Januari dan 30 Maret 2018, di pusat kesehatan primer Babel, studi kuantitatif deskriptif ini menggunakan alat penilaian yang dikembangkan secara khusus dan pengumpulan data melalui formulir pengawasan triwulanan. Temuan utama menunjukkan bahwa 85% lingkungan sekitar sudah sesuai, 46% sistem sanitasi memadai, 96% alat pemadam kebakaran tersedia, dan 52% pintu darurat dapat diakses. Rekomendasinya menekankan pada peningkatan pelatihan karyawan mengenai ERP, melakukan inspeksi sistem keselamatan secara berkala, dan meningkatkan kesadaran akan pentingnya keselamatan kerja di kalangan staf.

**Kata Kunci:** Keselamatan Kerja, Rencana Tanggap Darurat, Puskesmas, Penilaian Risiko Tempat Kerja, Pelatihan Karyawan.

### 1. INTRODUCTION

The simple truth is that emergencies and disasters can strike anyone, anytime, and anywhere, as known workplace safety greatly depend on the enforcement of occupational safety policy and inspection of workplace. Compliance is obtained specifically through active efforts made to reduce occupational hazards when it is not possible to effectively stop it.

However, occupational health risks especially in relation to work overload, lack of task control and role ambiguity and poor organization might be a great threat.

Safety in any operation works best if the person or people in charge take a leading role in managing safety and health. By having a good safety management program, you can avoid not only injuries, but also other incidents that are costly, time consuming, stressful and inconvenient. .

Employees must be informed of the ERP as part of their safety orientation. Plan and all it's significant revisions should be reminded to all persons as necessary and encouraged them training the plan practically.

The absence of training and poor compliance to set rule increase risk, so regular supervision and provision of safety devices and training are more likely to reduce health risks in work place.

The actions taken in the initial minutes of an emergency are critical. A prompt warning to employees to evacuate, shelter or lockdown can save lives. A call for help to public emergency services that provides full and accurate information will help the dispatcher send the right responders and equipment. An employee trained to administer first aid can be lifesaving. Action by employees with knowledge of building and process systems can help control a leak and minimize damage to the facility and the environment. The first step when developing an emergency response plan is to conduct a risk assessment to identify potential emergency scenarios. An understanding of what can happen will enable you to determine resource requirements and to develop plans and procedures to prepare your business. The emergency plan should be consistent with your performance objectives.

What is a job hazard analysis? A job hazard analysis is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

### **Research question**

Is the Emergency Response Plan in work place of Primary Health Care centers full of life or it is only ink on paper. However, the problem of the statement in this study is that employees possess no enough information about ERP.

The purpose of this study is to confirm procedures and duties, to promote planning, and to establish staff training for fire, earthquake, bomb threats, chemical spill, and other emergency evacuations to increase their awareness and orientation about the plan.

The aim is to ensure that there is a formal process for hazard identification, risk assessment and control to effectively manage workplace and safety hazards within the Primary Health Care centers.

### **Research objective**

The study is to assess one of the animate hazard problems in work environment include Emergency Response Plan in Primary Health Care centers in Babylon city. Moreover, the study will also assess incinerator, fire alarm system, emergency outlet, periodic examination of employees, disposal of medical waste, sewage system.

## **2. LITERATURE REVIEW**

### **Emergency Response Plan**

The actions taken in the initial minutes of an emergency are critical. A prompt warning to employees to evacuate, shelter or lockdown can save lives. A call for help to public emergency services that provides full and accurate information will help the dispatcher send the right responders and equipment. An employee trained to administer first aid or perform CPR can be lifesaving. Action by employees with knowledge of building and process systems can help control a leak and minimize damage to the facility and the environment.

The first step when developing an emergency response plan is to conduct a risk assessment to identify potential emergency scenarios. An understanding of what can happen will enable you to determine resource requirements and to develop plans and procedures to prepare your business. The emergency plan should be consistent with your performance objectives.

At the very least, every facility should develop and implement an emergency plan for protecting employees, visitors, contractors and anyone else in the facility. This part of the emergency plan is called “protective actions for life safety” and includes building evacuation (“fire drills”), sheltering from severe weather such as tornadoes, “shelter-in-place” from an exterior airborne hazard such as a chemical release and lockdown. Lockdown is protective action when faced with an act of violence.

When an emergency occurs, the first priority is always life safety. The second priority is the stabilization of the incident. There are many actions that can be taken to stabilize an incident and minimize potential damage. First aid and CPR by trained employees can save lives. Use of fire extinguishers by trained employees can extinguish a small fire. Containment

of a small chemical spill and supervision of building utilities and systems can minimize damage to a building and help prevent environmental damage.

Some severe weather events can be forecast hours before they arrive, providing valuable time to protect a facility. A plan should be established and resources should be on hand, or quickly, available to prepare a facility. The plan should also include a process for damage assessment, salvage, protection of undamaged property and cleanup following an incident. These actions to minimize further damage and business disruption are examples of property conservation.

Guidance for the development of an emergency response plan can be found in this step. Build your emergency response plan using this worksheet.

### **Protective Actions for Life Safety**

When there is a hazard within a building such as a fire or chemical spill, occupants within the building should be evacuated or relocated to safety. Other incidents such as a bomb threat or receipt of a suspicious package may also require evacuation. If a tornado warning is broadcast, everyone should be moved to the strongest part of the building and away from exterior glass. If a transportation accident on a nearby highway results in the release of a chemical cloud, the fire department may warn to “shelter-in-place.” To protect employees from an act of violence, “lockdown” should be broadcast and everyone should hide or barricade themselves from the perpetrator.

Protective actions for life safety include:

- Evacuation
- Sheltering
- Shelter-In-Place
- Lockdown

Your emergency plan should include these protective actions. If you are a tenant in multi-tenanted building, coordinate planning with the building manager.

### **Evacuation**

Prompt evacuation of employees requires a warning system that can be heard throughout the building. Test your fire alarm system to determine if it can be heard by all employees. If there is no fire alarm system, use a public address system, air horns or other means to warn everyone to evacuate. Sound the evacuation signal during planned drills so employees are familiar with the sound.

Make sure that there are sufficient exits available at all times.

- Check to see that there are at least two exits from hazardous areas on every floor of every building. Building or fire codes may require more exits for larger buildings.
- Walk around the building and verify that exits are marked with exit signs and there is sufficient lighting so people can safely travel to an exit. If you find anything that blocks an exit, have it removed.
- Enter every stairwell, walk down the stairs, and open the exit door to the outside. Continue walking until you reach a safe place away from the building. Consider using this safe area as an assembly area for evacuees.

Appoint an evacuation team leader and assign employees to direct evacuation of the building. Assign at least one person to each floor to act as a “floor warden” to direct employees to the nearest safe exit. Assign a backup in case the floor warden is not available or if the size of the floor is very large. Ask employees if they would need any special assistance evacuating or moving to shelter. Assign a “buddy” or aide to assist persons with disabilities during an emergency. Contact the fire department to develop a plan to evacuate persons with disabilities.

Have a list of employees and maintain a visitor log at the front desk, reception area or main office area. Assign someone to take the lists to the assembly area when the building is evacuated. Use the lists to account for everyone and inform the fire department whether everyone has been accounted for. When employees are evacuated from a building, OSHA regulations require an accounting to ensure that everyone has gotten out safely. A fire, chemical spill or other hazard may block an exit, so make sure the evacuation team can direct employees to an alternate safe exit.

### **Site and Facility Plans and Information**

It is important to document information about your facility. That information is vital to ensure emergency responders can safely stabilize an incident that may occur. Documentation of building systems may also prove valuable when a utility system fails ,such as when a water pipe breaks and no one knows how to shut off the water.

Compile a site-plan and plans for each floor of each building. Plans should show the layout of access roads, parking areas, buildings on the property, building entrances, the locations of emergency equipment and the locations of controls for building utility and protection systems. Instructions for operating all systems and equipment should be accessible to emergency responders.

Provide a copy of the plan to the public emergency services that would respond to your facility and others with responsibility for building management and security. Store the plan with other emergency planning information such as chemical Material Safety Data Sheets (MSDS), which are required by Hazard Communication or “right to know” regulations.

## **Training and Exercises**

### **a. Ten Steps for Developing the Emergency Response Plan**

1. Review performance objectives for the program.
2. Review hazard or threat scenarios identified during the risk assessment.
3. Assess the availability and capabilities of resources for incident stabilization including people, systems and equipment available within your business and from external sources.
4. Talk with public emergency services (e.g., fire, police and emergency medical services) to determine their response time to your facility, knowledge of your facility and its hazards and their capabilities to stabilize an emergency at your facility.
5. Determine if there are any regulations pertaining to emergency planning at your facility; address applicable regulations in the plan.
6. Develop protective actions for life safety (evacuation, shelter, shelter-in-place, lockdown).
7. Develop hazard and threat-specific emergency procedures using guidance from the resource links on this page. Write your emergency response plan using this template
8. Coordinate emergency planning with public emergency services to stabilize incidents involving the hazards at your facility.
9. Train personnel so they can fulfill their roles and responsibilities.
10. Facilitate exercises to practice your plan.

## **Hazard Identification and Assessment**

One of the "root causes" of workplace injuries, illnesses, and incidents is the failure to identify or recognize hazards that are present, or that could have been anticipated. A critical element of any effective safety and health program is a proactive, ongoing process to identify and assess such hazards.

To identify and assess hazards, employers and workers:

- Collect and review information about the hazards present or likely to be present in the workplace.

- Conduct initial and periodic workplace inspections of the workplace to identify new or recurring hazards.
- Investigate injuries, illnesses, incidents, and close calls/near misses to determine the underlying hazards, their causes, and safety and health program shortcomings.
- Group similar incidents and identify trends in injuries, illnesses, and hazards reported.
- Consider hazards associated with emergency or nonroutine situations.
- Determine the severity and likelihood of incidents that could result for each hazard identified, and use this information to prioritize corrective actions.

Some hazards, such as housekeeping and tripping hazards, can and should be fixed as they are found. Fixing hazards on the spot emphasizes the importance of safety and health and takes advantage of a safety leadership opportunity. To learn more about fixing other hazards identified using the processes described here.

### **Action item 1: Collect existing information about workplace hazards**

Information on workplace hazards may already be available to employers and workers, from both internal and external sources.

### **How to accomplish it**

Collect, organize, and review information with workers to determine what types of hazards may be present and which workers may be exposed or potentially exposed. Information available in the workplace may include:

- Equipment and machinery operating manuals.
- Safety Data Sheets (SDS) provided by chemical manufacturers.
- Self-inspection reports and inspection reports from insurance carriers, government agencies, and consultants.
- Records of previous injuries and illnesses, such as OSHA 300 and 301 logs and reports of incident investigations.
- Workers' compensation records and reports.
- Patterns of frequently-occurring injuries and illnesses.
- Exposure monitoring results, industrial hygiene assessments, and medical records (appropriately redacted to ensure patient/worker privacy).
- Existing safety and health programs (lockout/tagout, confined spaces, process safety management, personal protective equipment, etc.).

- Input from workers, including surveys or minutes from safety and health committee meetings.
- Results of job hazard analyses, also known as job safety analyses.

Information about hazards may be available from outside sources, such as:

- OSHA, National Institute for Occupational Safety and Health (NIOSH), and Centers for Disease Control and Prevention (CDC) websites, publications, and alerts.
- Trade associations.
- Labor unions, state and local occupational safety and health committees /coalitions ("COSH groups"), and worker advocacy groups.
- Safety and health consultants.

### **Action item 2: Inspect the workplace for safety hazards**

Hazards can be introduced over time as workstations and processes change, equipment or tools become worn, maintenance is neglected, or housekeeping practices decline. Setting aside time to regularly inspect the workplace for hazards can help identify shortcomings so that they can be addressed before an incident occurs.

#### **How to accomplish it**

- Conduct regular inspections of all operations, equipment, work areas and facilities. Have workers participate on the inspection team and talk to them about hazards that they see or report.
- Be sure to document inspections so you can later verify that hazardous conditions are corrected. Take photos or video of problem areas to facilitate later discussion and brainstorming about how to control them, and for use as learning aids.
- Include all areas and activities in these inspections, such as storage and warehousing, facility and equipment maintenance, purchasing and office functions, and the activities of on-site contractors, subcontractors, and temporary employees.
- Regularly inspect both plant vehicles (e.g., forklifts, powered industrial trucks) and transportation vehicles (e.g., cars, trucks).
- Use checklists that highlight things to look for. Typical hazards fall into several major categories, such as those listed below; each workplace will have its own list:
  - General housekeeping
  - Slip, trip, and fall hazards
  - Electrical hazards



- Equipment operation
- Equipment maintenance
- Fire protection
- Work organization and process flow (including staffing and scheduling)
- Work practices
- Workplace violence
- Ergonomic problems
- Lack of emergency procedures

Before changing operations, workstations, or workflow; making major organizational changes; or introducing new equipment, materials, or processes, seek the input of workers and evaluate the planned changes for potential hazards and related risks.

### **Action item 3: Identify health hazards**

Identifying workers' exposure to health hazards is typically more complex than identifying physical safety hazards. For example, gases and vapors may be invisible, often have no odor, and may not have an immediately noticeable harmful health effect. Health hazards include chemical hazards (solvents, adhesives, paints, toxic dusts, etc.), physical hazards (noise, radiation, heat, etc.), biological hazards (infectious diseases), and ergonomic risk factors (heavy lifting, repetitive motions, vibration). Reviewing workers' medical records (appropriately redacted to ensure patient/worker privacy) can be useful in identifying health hazards associated with workplace exposures.

### **Action item 4: Conduct incident investigations**

Workplace incidents –including injuries, illnesses, close calls/near misses, and reports of other concerns– provide a clear indication of where hazards exist. By thoroughly investigating incidents and reports, you will identify hazards that are likely to cause future harm. The purpose of an investigation must always be to identify the root causes (and there is often more than one) of the incident or concern, in order to prevent future occurrences.

### **Action item 5: Identify hazards associated with emergency and non-routine situations**

Emergencies present hazards that need to be recognized and understood. Nonroutine or infrequent tasks, including maintenance and startup/shutdown activities, also present potential hazards. Plans and procedures need to be developed for responding appropriately and safely to hazards associated with foreseeable emergency scenarios and nonroutine situations.

### **How to accomplish it**

Identify foreseeable emergency scenarios and nonroutine tasks, taking into account the types of material and equipment in use and the location within the facility. Scenarios such as the following may be foreseeable:

- Fires and explosions
- Chemical releases
- Hazardous material spills
- Startups after planned or unplanned equipment shutdowns
- Nonroutine tasks, such as infrequently performed maintenance activities
- Structural collapse
- Disease outbreaks
- Weather emergencies and natural disasters
- Medical emergencies
- Workplace violence

### **Action item 6: Characterize the nature of identified hazards, identify interim control measures, and prioritize the hazards for control.**

The next step is to assess and understand the hazards identified and the types of incidents that could result from worker exposure to those hazards. This information can be used to develop interim controls and to prioritize hazards for permanent control.

### **How to accomplish it**

- Evaluate each hazard by considering the severity of potential outcomes, the likelihood that an event or exposure will occur, and the number of workers who might be exposed.
- Use interim control measures to protect workers until more permanent solutions can be implemented.
- Prioritize the hazards so that those presenting the greatest risk are addressed first. Note, however, that employers have an ongoing obligation to control all serious recognized hazards and to protect workers.

### **Hazard identification tools**

There are many standard hazard identification tools that can help to document the hazard identification and control processes, for specific examples.

- Inspection Checklists are best for ensuring compliance with regulations, rules and policies.

- Personal Protective Equipment (PPE) Assessment forms are a valuable communication tool for teaching employees what PPE they need to wear to perform their work safely.
- Pre-task planning (PTP), valuable when procedures and conditions change frequently, is often used as a reminder to employees of the risks associated with the operations they will perform during a particular time frame.
- Job Hazard Analysis, often referred to as a Job Safety Analysis (JSA), is an important accident prevention tool that works by identifying existing and/or potential hazards associated with a particular job.

### **How do you identify hazards?**

Consider what could cause the injuries and illnesses your employees could have when they are at work – then determine how to eliminate or control those hazards. Here are six things you can do to get started:

1. Conduct a baseline hazard survey.
2. Perform regular workplace inspections.
3. Do a job-hazard analysis.
4. Use safety data sheets to identify chemical hazards.
5. Look for new hazards whenever you change equipment, materials, or work processes.
6. Investigate incident and accidents to determine root causes.

### **Emergency Assembly Points**

Emergency Assembly Points (EAPs) are designated areas on campus, which are to be used in the case of emergency situations. They are intended to provide a safe area for individuals to stand, while waiting for emergency personnel to respond. There are many characteristics of Assembly Points :

- Open areas , easily and safely accessible
- Large enough to accommodate all building occupants
- Located away from power lines, poles, trees, gas lines and vehicles
- Accessible to emergency medical personnel

### **Crisis Management Team**

- A Crisis Management Team is formed to protect an organization against the adverse effects of crisis. Crisis Management team prepares an organization for inevitable threats.
- The purpose of a crisis management team is to manage and lead individuals, communicate important information to all departments, and analyze the problem and potential damages. Thus, one of the biggest factors that will determine success or failure is the strength of the crisis management team you have in place.
- Once a crisis is being detected, employees must quickly jump into action and take quick decisions, so this core group will help to analyze the circumstances, determine a plan of action, and implement it in order to minimize damages as a result of the crisis. Moreover, crisis Management Team is formed to respond immediately to warning signals of crisis and execute relevant plans to overcome emergency situations. and devise strategies to help organization come out of difficult times as soon as possible.

### **Role of Crisis Management Team**

- Detecting the early signs of crisis.
- Identifying the problem areas
- Sit with employees face to face and discuss on the identified areas of concern
- Prepare crisis management plan which works best during emergency situations
- Encourage the employees to face problems with courage, determination and smile. Motivate them not to lose hope and deliver their level best.
- Help the organization come out of tough times and also prepare it for the future.

### **Emergency response teams (ERT)**

Also called incident response teams, are groups of people who prepare for and respond to emergency incidents such as natural disasters, security threats, public health crises, or other potential business disruptions. The goal of an ERT is to restore or maintain operations and minimize losses during an emergency incident.

### **Rapid response teams (RRTs)**

Also known as a medical emergency teams are not the same as emergency response teams, the later which should include in emergency response plan while RRTs were developed to promote rapid assessment and treatment of patients whose clinical condition was deteriorating.

### **Employer responsibilities**

An employer has many responsibilities for hazard control under the legislation. These responsibilities include but are not limited to the following:

- Identify, assess, and properly control workplace hazards.
- Prepare a current list of known hazards in the workplace, including chemical and biological substances, physical agents, work design hazards, and any other risks.
- Maintain hazard identification and control lists as part of the health and safety management system.
- Develop written safe work practices and procedures.
- Inform workers about the hazards in the workplace.
- Train workers with regard to hazard assessment and required control measures to keep them safe at work.
- Ensure that an emergency response plan is developed for hazardous tasks. While the current Saskatchewan legislation does not explicitly outline the steps for a hazard identification process, following these steps will help you accomplish the requirement:  
Identify hazards
- Assess the risk of the identified hazards using a risk assessment methodology
- Determine the appropriate controls
- Implement controls to address identified hazards, focusing on hazards with the greatest risk first, and considering:
  - hierarchy of controls:
    - elimination/substitution, engineering, administrative (including safe work practices/procedures and training), personal protective equipment (PPE)
    - at the source, along the path, at the worker
  - regulatory and other established standards

### **The priority.**

All hazards that have been assessed should be dealt with in order of priority. The most effective control option/s should be selected to eliminate or minimize risks. The Hierarchy of Controls, ranks control options from highest level of protection and reliability to lowest. This should be used to determine the most effective control/s. Eliminate the Hazard, the most effective control measures eliminate the hazard and associated risks. This can be achieved through removing the hazard or selecting alternate products or equipment to eliminate the risk

If a hazard cannot be eliminated then risks can be minimized by lower control measures. Control Measures, these are used to minimize the risks and involve on or a combination of protections

### **3. THE METHODOLOGY**

#### **Method**

##### **1. Design of the Study**

A descriptive quantitative design was carried out through the present study in order to achieve the early stated objectives.

##### **2. Setting of the Study**

This study is an analytical, observational, cross sectional study. It was conducted on second of January 2018 till thirtieth of march 2018, with in a period of three months. The study has been conducted in Babylon governorate at multiple primary health care centers, which are the basic structural and functional units of the public health services in developing countries; they provide therapeutic, preventive and educational services to the majority of the population.

##### **3. The Study Instrument**

An assessment tool was adopted and developed by the researcher to meet the objective of the study. The study consist of forty six PHCC distributed over five primary health care sectors, which are Hilla center first sector (11) PHCC, Hilla center second sector(11) PHCC, Mahaweel primary health care sector(5) PHCC, Musayyib primary health care sector(9) PHCC, Al-Hashimiyah primary health care sector(10) PHCC.

##### **4. Data Collection**

The data were collected through the period from (second of January 2018 till thirtieth of march2018, with in a period of three months) for the present study through utilization of the questionnaire that constructed as a mean of data collection.

The data was collected through ministerial supervisory form, which must be filled quarterly and send to Occupational Health and Safety Unit / Department of Public Health / Babylon Health Directorate.

##### **5. Data Analysis**

The following statistical procedure was used in order to analysis the data of the study by using micro soft excel and program of SPSS version 20. It's most appropriate method which can be used including the following statistical methods.

Statistically analysis of this study by SPSS version( 20) which include chi-square, binomial test, contingency coefficient, odds ratio, mean and standard deviation .

## 6. Descriptive Data Analysis Approach

Descriptive Data Analysis procedures are used to describe the study variables for dimensions include:

1. Frequency (f)
2. Percentages (%) =  $\frac{\text{frequency}}{\text{sample size}}$
3. Mean ( $\bar{x}$ ) =  $\frac{\sum x}{N}$

$\bar{x}$ = the mean

N: number of institutions

X: each individual raw score

$\sum$ : the summation of

4. Distribution tables

The following statistical procedures were used in order to analysis the data of this study by using Micro soft excel and program of SPSS version( 20) which include chi-square, binomial test, contingency coefficient, odds ratio, mean and standard deviation.

## 4. THE RESULTS:

### 1. Validity of institution

A special classification system has been followed for the primary health center buildings, which depends on several factors as in Figure 1.

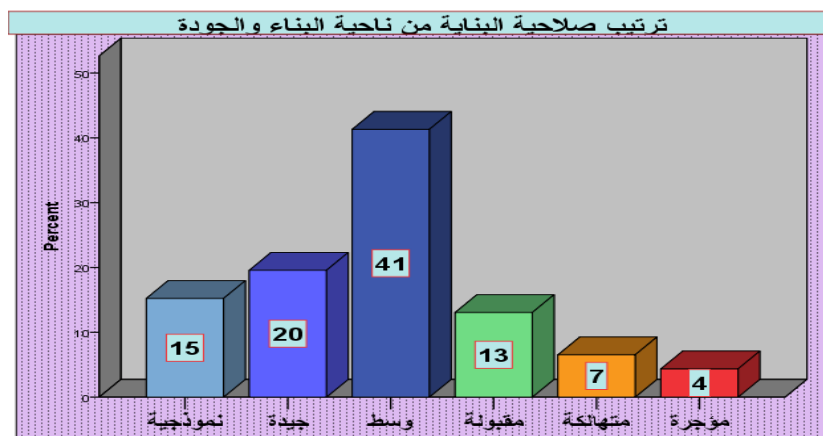


Figure (1) shows the validity of institution

## 2. The environment surrounding the building

The first paragraph in Table 1 and Figure 2 are related to the environment surrounding the building, which shows 85% of the surrounding environments are valid.

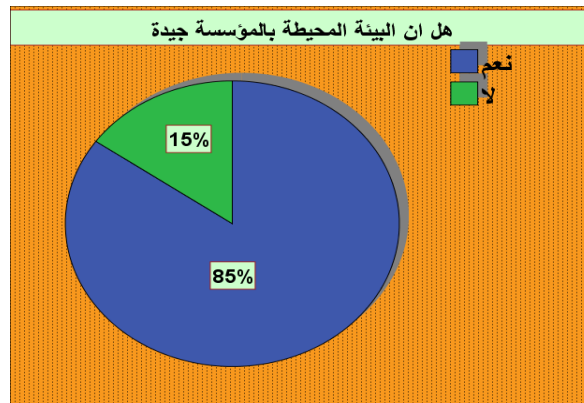


Figure (2) demonstrate environment surrounding institution

## 3. Sewage system:

The second paragraph in Table 1 and Figure 3 are related to sewage systems of buildings reveal that 46% that system are valid.

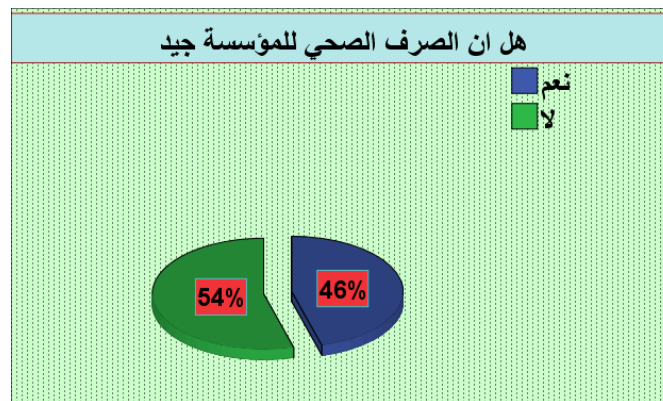


Figure (3) shows the sewage system

## 4. Availability of fire extinguishers

Checking up and maintenance of fire extinguishers The third paragraph in Table 1 and Figure 4 are related to availability of fire extinguishers with in the institutions , which show 96% of them are available.

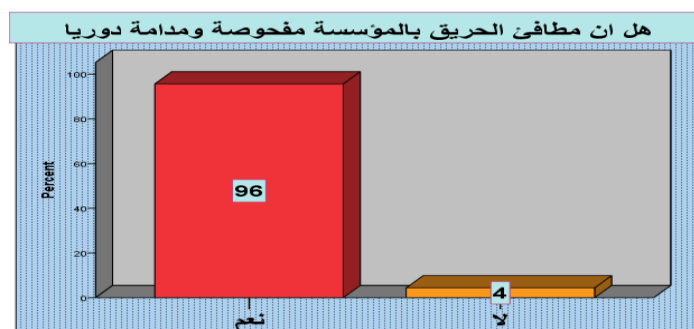


Figure (4) demonstrate availability of fire extinguishers



## 5. Emergency Outlets

The forth paragraph in Table 1 and Figure 5 are related to the existence of emergency exits within institutions which show 52% of them are available.

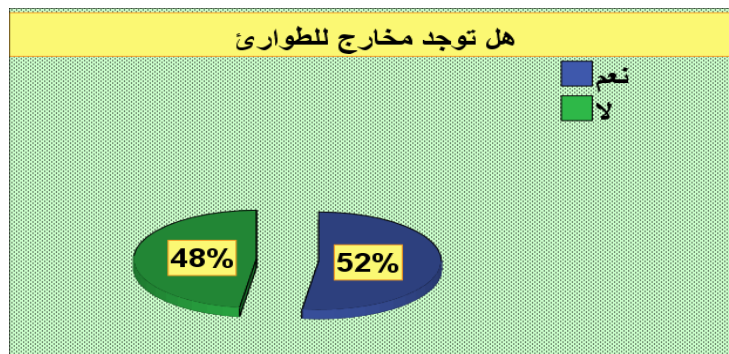


Figure (5) Shows Emergency Outlets

## 6. Emergency exit and establishment

The fifth paragraph in Table 1 and Figure 6 are related to the establishment of emergency exits within institution, which show 30% of them are setting.

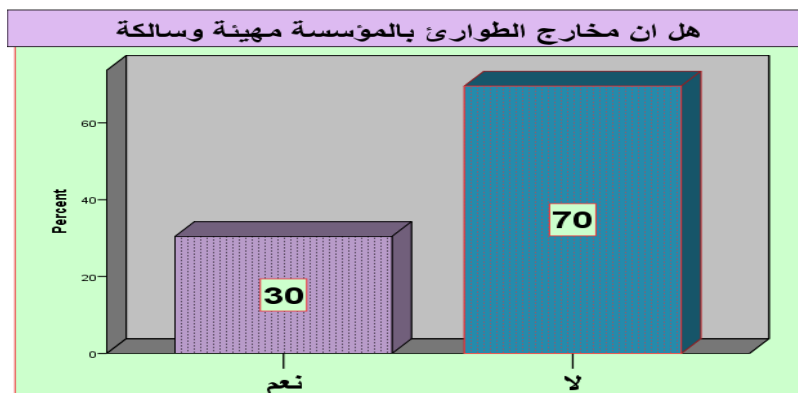


Figure (6) Shows Emergency exit

## 7. Measuring the indicators of work environment

The measurement of indicators of working environment with in the institutions, such as temperature, humidity, light intensity and noise which shows no measuring 0%.

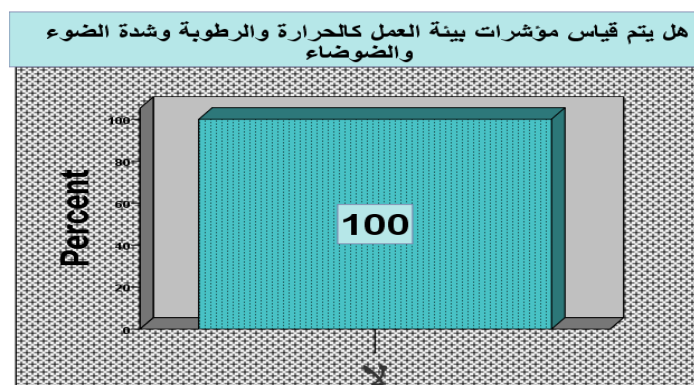


Figure (7) demonstrate measuring the indicators of work environment

## 8. Periodic examination of employees

The seventh paragraph in Table 1 and Figure 8 are related to the procedures for periodic investigations of employees within institutions, which show no any examination.

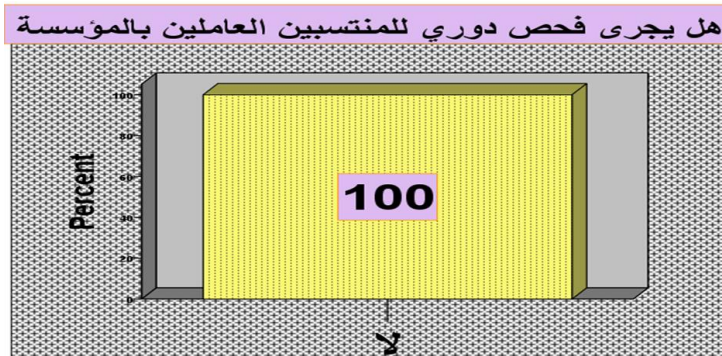


Figure (8) shows the periodic examination of employees

## 9. Existence of holocaust

The eighth paragraph in Table 1 and Figure 9 are related to the presence of incinerators in institutions, which show 15% available.

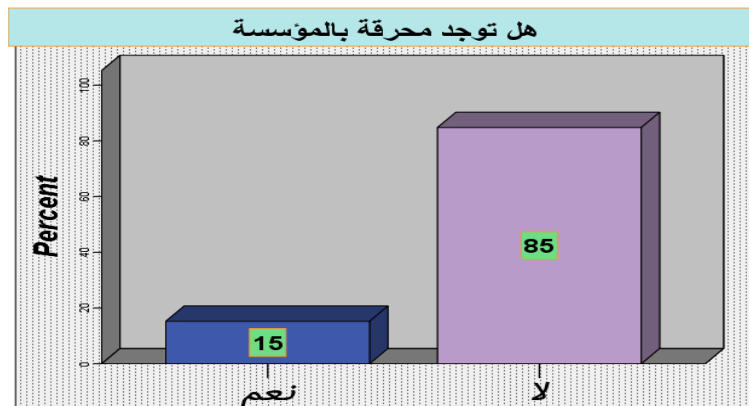


Figure (9) demonstrate an existence of holocaust

## 10. Early warning devices.

The ninth paragraph in Table 1 and Figure 10 are related to early warning requirements in institutions, which show 15% are available only for fire.

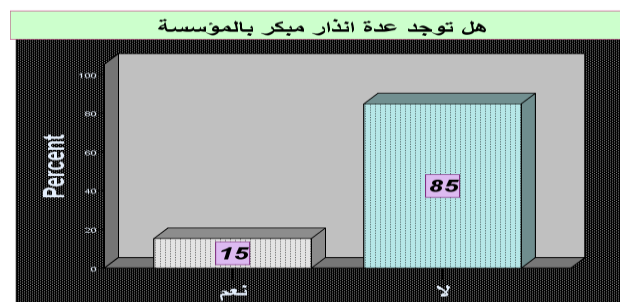


Figure (10) graph demonstrate an early warning

### Existence of an emergency plan orders

The tenth paragraph in Table 1 and Figure 11 are related to the existence of administrative orders to form emergency teams within the institutions, which show 100% without administrative orders.

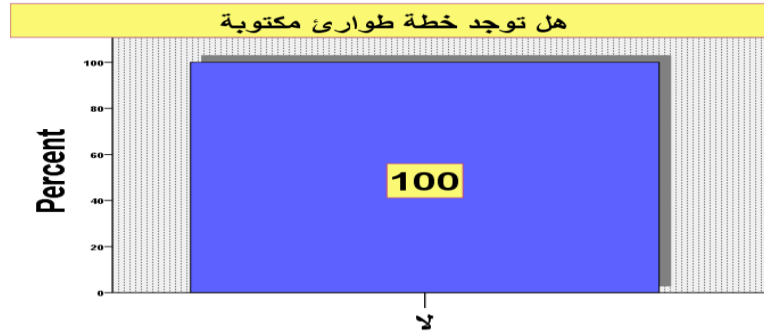


Figure (11) Shows Existence of an emergency plan orders

### Emergency plan training

The eleventh paragraph in Table 1 and Figure 12 are related to the training of contingency teams on the plan, which show no training 0%.

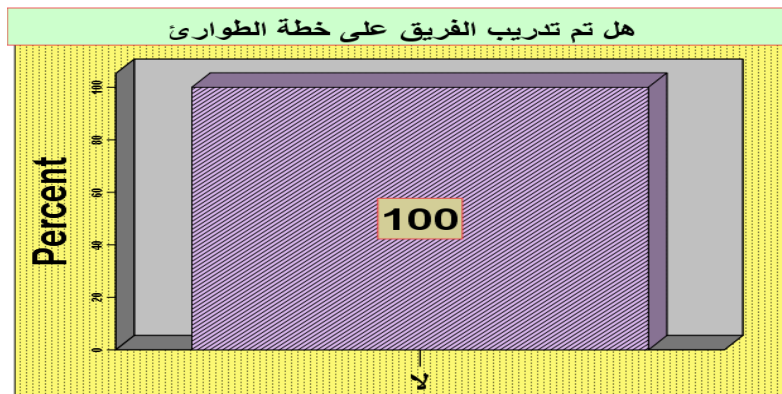


Figure (12) Shows Emergency plan training

### Outline of outlets

The twelfth paragraph in Table 1 and Figure 13 are related to the presence of guide lines for emergency exits within institutions, which show 15%.

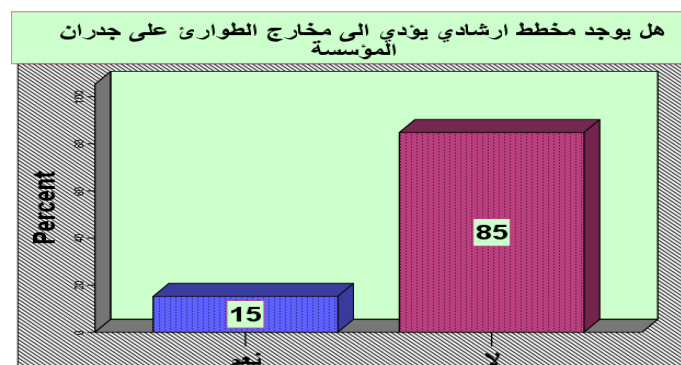
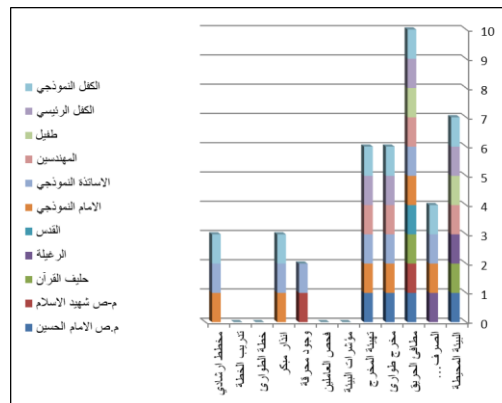


Figure (13) Shows outline of outlets

### The infrastructure of health centers in the First Hilla sector

Figure 14 is related to the infrastructure of health centers in the First Hilla sector.



**Figure (14) demonstrates the infrastructure of health centers in the First Hilla sector**

### the infrastructure of health centers in the Second Hilla sector

Figure (15) shows the infrastructure of health centers in the Second Hilla sector.

## 5. CONCLUSION

Training and Exercises for emergency responders who are working in primary health centers at Babylon directorate, thus they are familiar with detection, alarm, communications, warning and protection systems. Review plans with staff to ensure they are familiar with their role and can carry out assigned responsibilities. Conduct evacuation, sheltering, sheltering-in-place and lockdown drills so employees will recognize the sound used to warn them and they will know what to do. Facilitate exercises to practice the plan, familiarize personnel with the plan and identify any gaps or deficiencies in the plan.

Effective monitoring and reporting of any building and office of Babylon health centers can help identify potential threats before they escalate into disasters. Public alerting communicates warning messages that a disaster is imminent and provides the public with recommended actions to manage an emergency. Communications during and directly after a disaster explain and guide immediate response actions to minimize impacts and to maintain safety and security. These communications are instructive on the requirements for short, medium and long-term recovery.

The ultimate purpose of emergency management is to save lives, preserve the environment and protect property and the economy. The protection of life is of paramount importance. In the broadest sense, emergency management raises the understanding of risks and contributes to a safer, prosperous, sustainable, disaster resilient society in Babel Directorate.

## 6. RECOMMENDATIONS

1. It is necessary, at the present time and at least to rise the representation of the occupational health and safety program to the level of a division in the Public Health Department instead of a unit and that the aforementioned program be represented in hospitals and sectors at the unit level and not only a committee according to the structure, to the tasks and duties assigned to this program.
2. It is important to determine Emergency Assembly Points (EAPs) which are designated areas on campus. Hence, are to be used in the case of emergency situations in all primary health centers.
3. Must differentiate between the team included in emergency response plan which called (Emergency Response Team or Crisis Management Team; prepares an organization for inevitable threats), and the other team which is called (Rapid Response Team or Medical Emergency Team) which was developed to promote rapid assessment and control of infectious diseases.
4. Emergency management must rely on effective planning, insight, and the ability to link disparate elements of an emergency response, within coherent strategies.
5. The success of the plan to face crises and emergency situations depends mainly on the crisis management team and the extent of its training well to ensure rapid response and discover warning signals and take the necessary preventive measures also depends on the available means and equipment and the announced instructions that regulate the implementation of the plan
6. The process of assessing and analyzing the risks of the building must be carried out in the initial design stages to identify the risks and potential problems that may affect the safety of workers. The processes of reviewing, evaluating and analyzing the risks and safety standards should be done regularly and periodically according to the nature of the work and identify defects in the architectural and engineering design and determine the effects of health, environment, human and economic losses. Moreover, the extent of their spread outside the boundaries of the establishment, the consequences and reactions resulting therefrom, and the measures necessary to confront them.
7. The facility management should submit the facility's potential disaster plan to the competent executive authorities after preparing and reviewing it and inform these authorities when any change in the facility's conditions occurs.
8. Identify organizational, technical and human errors related to occupational safety and health that lead to accidents and potential disasters and that are an indication of the

incompetence of workers and the extent of their need for periodic, regular training and education and awareness and the development of their technical and organizational skills to perform the work according to the operating instructions in the building.

9. This study should applied on large population (national level) to generalized results and improve Emergency Response plan.
10. Instructional program should be conducted for employee and patients to enhancing their awareness and knowledge about their self-care.
11. Booklets of important of Emergency Response plan should be available and distributed for all health workers to increase their awareness about any accident.
12. The Iraqi media channels and social media should play role in instruct the people about the importance of Emergency Response plan on their health to minimize the number and the effect of hazard to people

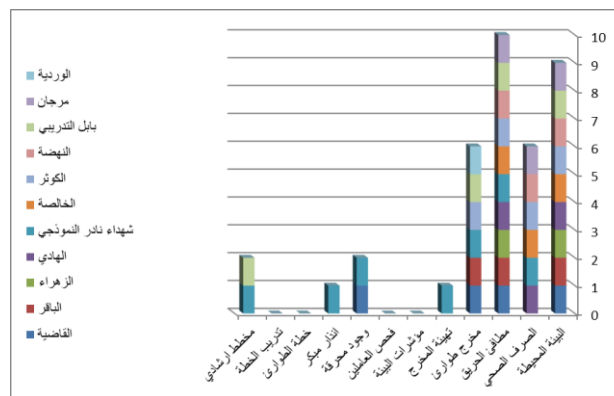


Figure (15) demonstrates the infrastructure of health centers in the Second Hilla sector

the infrastructure of health centers in Al- Mahaweel sector.

The Figure (16) is related to the infrastructure of health centers in Al- Mahaweel sector.

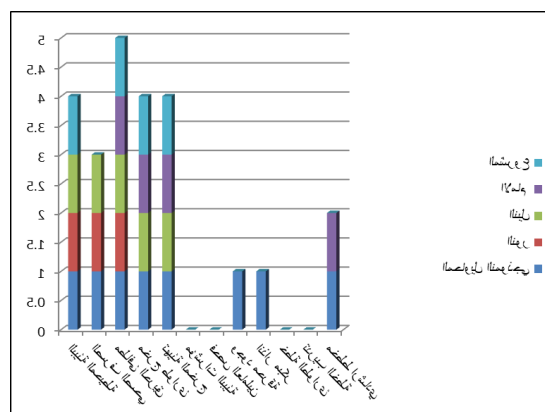
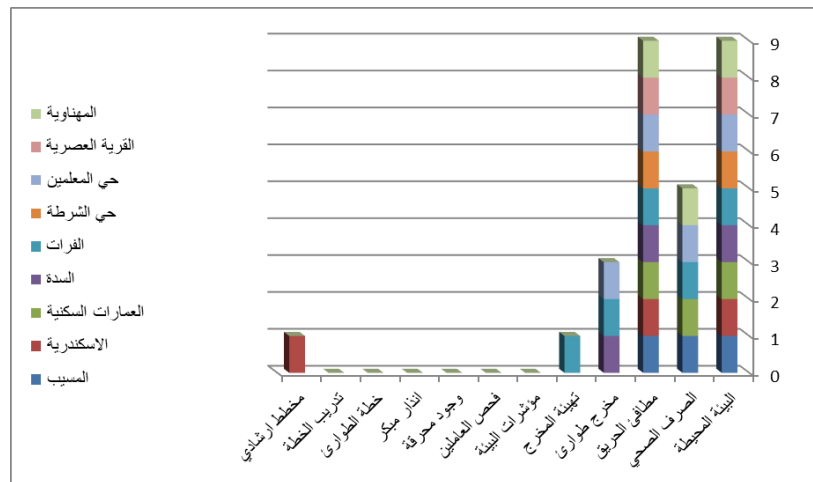


Figure (16) demonstrates the infrastructure of health centers in Al- Mahaweel sector

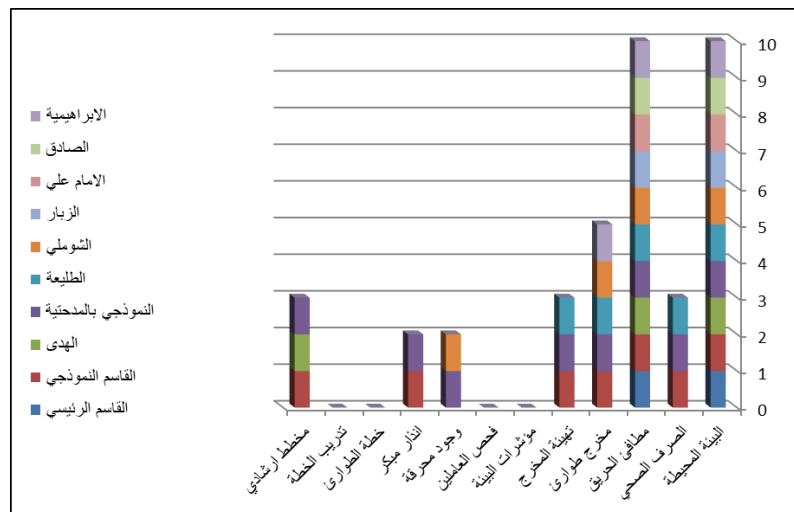
The figure (17) shows the infrastructure of health centers in Al-Musayyib sector



**Figure (17) demonstrates the infrastructure of health centers in Al-Musayyib sector**

### the infrastructure of health centers in the Al-Hashimiyah sector

The Figure (18) demonstrates the infrastructure of health centers in the Al-Hashimiyah sector



**Figure (18) demonstrates the infrastructure of health centers in the Al-Hashimiyah sector**

### Variables in the study and the statistics

Table (1) shows that there are thirteen terms are related to the health institution's infrastructures were selected for the availability of OSH requirements. These variables were collected from 46 PHCCs distributed over 5 sectors in Babylon governorate.

Also the table shows that all health centers have an emergency plan orders exist 100%, but there is no regularly tested for the plan so no one of the employees have been trained on it, so training on emergency plan is 0%.



Descriptive Statistics						
No.	variable	percent	frequency	Mean	Std. Deviation	Variance
1	environment surrounding institution	84.8	39	.85	.363	.132
2	sewage system	84.4	39	.85	.363	.132
3	Fire extinguishers	95.7	44	.96	.206	.043
4	Emergency Outlets	63	29	.63	.488	.238
5	Emergency exit settings	47.8	22	.48	.505	.255
6	Measuring business environment indicators	0	0	.00	.000	.000
7	Periodic examination of employees	0	0	.00	.000	.000
8	The existence of a holocaust	15.2	7	.15	.363	.132
9	An early warning	15.2	7	.15	.363	.132
10	Existence of an emergency plan order	0	0	.00	.000	.000
11	Emergency Plan Training	0	0	.00	.000	.000
12	Outline of outlets	28.3	13	.28	.455	.207
	Valid Number	46				

**Table (1) shows all the variables in the study and the statistics for each one**

## 7. REFERENCES

- Ag Injury News. (n.d.). Ag Injury News Clippings. Retrieved from <https://www.aginjurynews.org/>
- Al-Azzawi, D. S., Obaid, K. A., & Mahmoud, N. S. (2011). Incidence of whooping cough in Diyala province, Iraq. *Journal of Medical Research*, 6(4).
- Atkinson, W., Wolfe, C., Hamborsky, J., & McIntyre, L. (Eds.). (2009). *Epidemiology and prevention of vaccine-preventable diseases* (11th ed., pp. 199-216). Public Health Foundation.
- Bureau of Labor Statistics. (2010). *Injuries, Illnesses, and Fatalities 2010*. Retrieved from <https://www.bls.gov/iif/>
- Canadian Centre for Occupational Health and Safety. (2018). *Violence in the Workplace: OSH Answers*. Retrieved from <https://www.ccohs.ca/oshanswers/psychosocial/violence.html>
- Centers for Disease Control and Prevention. (2015). *Seasonal Influenza (Flu) in the Workplace – Guidance*. Retrieved from <https://www.cdc.gov/flu/workplace/index.htm>
- Concha-Barrientos, M., Imel, N. D., Driscoll, T., Steenland, K., Punnett, L., Fingerhut, M. A., Prüss-Üstün, A., Leigh, J., Tak, S. W., & Corvalán, C. (2004). Selected occupational risk factors. In M. Ezzati, A. D. Lopez, A. Rodgers, & C. J. L. Murray (Eds.), *Comparative quantification of health risks* (pp. 1651-1801). World Health Organization.
- de Greeff, S. C., Dekkers, A. L. M., Teunis, P., Rahamat-Langendoen, J. C., Mooi, F. R., & de Melker, H. E. (2009). Seasonal patterns in time series of pertussis. *Epidemiology and Infection*, 137(10), 1388-1395. <https://doi.org/10.1017/S0950268809002520>
- Edmonds, O. P., & Edmonds, E. L. (1963). An account of the founding of H.M. Inspectorate of Mines and the work of the first inspector Hugh Seymour Tremeneheere. *British Journal of Industrial Medicine*, 20(3), 210-217. <https://doi.org/10.1136/oem.20.3.210>



- European Commission. (n.d.). Health and safety at work statistics. Retrieved from <https://ec.europa.eu/eurostat/web/main/data/database>
- Federal Emergency Management Agency. (n.d.). Design guidance for shelters and safe rooms (FEMA 453). Retrieved from <https://www.fema.gov/media-library/assets/documents/2356>
- Garzia, N. A., Spinelli, J. J., Gotay, C. C., & Teschke, K. (2018). Literature review: Dermal monitoring data for pesticide exposure assessment of farm workers. *Journal of Agromedicine*, 23(3), 187-214. <https://doi.org/10.1080/1059924X.2018.1448734>
- Government of Western Australia. (2005). Guidance note: General duty of care in Western Australian workplaces. Retrieved from <https://www.commerce.wa.gov.au/worksafe/guidance-note-general-duty-care-western-australian-workplaces>
- Harnden, A., Perera, R., Brueggemann, A. B., & et al. (2006). Whooping cough in school-age children with persistent cough: Prospective cohort study in primary care. *British Medical Journal (BMJ)*, 333(7564), 174. <https://doi.org/10.1136/bmj.38862.667758.7C>
- Health & Safety Executive. (2014). Historical picture: Trends in work-related injuries and ill health in Great Britain since the introduction of the Health and Safety at Work Act (HSA) 1974. Retrieved from <https://www.hse.gov.uk/statistics/>
- International Labour Organization. (2013). Occupational Health Services and Practice. Retrieved from <https://www.ilo.org/global/topics/occupational-health-and-safety/lang-en/index.htm>
- International Labour Organization. (2016). World Day for Safety and Health at Work (Occupational Safety and Health). Retrieved from <https://www.ilo.org/global/topics/safety-and-health-at-work/lang-en/index.htm>
- International Occupational Hygiene Association. (n.d.). IOHA - International OEL Issues and Activities. Retrieved from <https://www.ioha.net/>
- Jawetz, E., Melnick, J. L., & Adelberg, E. A. (2004). *Medical microbiology* (23rd ed., pp. 282-284). Lange Medical Book, McGraw-Hill Companies.
- Kumaraveloo, K. S., & Lunner Kolstrup, C. (2018). Agriculture and musculoskeletal disorders in low- and middle-income countries. *Journal of Agromedicine*, 23(3), 227-248. <https://doi.org/10.1080/1059924X.2018.1458671>
- Long, S. S., Kliegman, R. M., Behrman, R. E., Jenson, H. B., & Nelson, W. E. (2007). *Nelson textbook of pediatrics* (Vol. 194, pp. 1178-1182). Saunders, an imprint of Elsevier Inc.
- National Fire Protection Association. (n.d.). NFPA 101: Life Safety Code®. Retrieved from <https://www.nfpa.org/Codes-and-Standards/All-Codes-and-Standards/List-of-Codes-and-Standards>
- National Institute for Occupational Safety and Health. (2012). Noise and Hearing Loss Prevention. Retrieved from <https://www.cdc.gov/niosh/topics/noise/>

- Oak Ridge National Laboratory. (2015). Oak Ridge National Laboratory | ORNL. Retrieved from <https://www.ornl.gov/>
- Occupational Safety and Health Administration. (n.d.). Employee alarm systems – OSHA 29 CFR 1910.165. Retrieved from <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.165>
- Occupational Safety and Health Administration. (n.d.). Evacuation Planning Matrix – OSHA. Retrieved from <https://www.osha.gov/etools/evacuation-planning>
- Occupational Safety and Health Administration. (n.d.). Evacuation Plans and Procedures eTool – OSHA. Retrieved from <https://www.osha.gov/etools/evacuation-planning>
- Occupational Safety and Health Administration. (n.d.). Means of egress – U.S. Occupational Safety & Health Administration (OSHA) 29 CFR 1910 Subpart E. Retrieved from <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.36>
- Phillips, O. (2017). The USPS is an extremely dangerous place to work. The Outline. Retrieved from <https://theoutline.com/>
- Ramos, A., Carlo, G., Grant, K., Bendixsen, C., Fuentes, A., Gamboa, R., Ramos, A. K., Carlo, G., & Grant, K. M. (2018). A preliminary analysis of immigrant cattle feedyard worker perspectives on job-related safety training. *Safety*, 4(3), 37. <https://doi.org/10.3390/safety4030037>
- Taylor, M. (2017). Your workplace safe employees. LinkedIn. Retrieved from <https://www.linkedin.com/>
- Veritas Consulting. (2009). Health and safety in the Construction Industry. Retrieved from <https://www.veritas-consulting.co.uk/>
- Weichelt, B., & Gorucu, S. (2018). Supplemental surveillance: A review of 2015 and 2016 agricultural injury data from news reports on AgInjuryNews.org. *Injury Prevention*. <https://doi.org/10.1136/injuryprev-2017-042671>
- Winter, K., Cohn, A., & Zipprich, J. (2012). California pertussis epidemic, 2010. *The Journal of Pediatrics*, 161(6), 1091-1096. <https://doi.org/10.1016/j.jpeds.2012.05.047>
- World Health Organization. (n.d.). WHO Definition of Health. Retrieved from <https://www.who.int/about/governance/definition/en/>
- (80) رقم الایة، الا سراء سورة، ال کريم ال قران