

STUDY ON “RISK ASSESSMENT AND MANAGEMENT FOR CLINICAL AND NON-CLINICAL DEPARTMENTS IN LLH HOSPITAL, MUSAFFAH, ABU DHABI (UAE)

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Mr. Manshu Butta

Under the Supervision and Guidance of

Dr. Susmit Jain

2022

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TO WHOMSOEVER IT MAY CONCERN

I hereby declare that this dissertation titled, **Risk Identification and Management for Clinical and Non-Clinical Departments in LLH Hospital Musaffah, Abu Dhabi** is the Bonafede record of my original research work. I declare it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged.

(Signature)

Name of the student: Mr. Manshu Butta

Roll Number: 1128

Completion Certification

This is to certify that Mr. Manshu Butta in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR university, Jaipur has successfully completed his dissertation at the LLH Hospital Musaffah, Abu Dhabi (UAE) during April 01, 2022 to June 21, 2022.

Place: Head of the Organisation

Date: Name of the Organisation

Certificate from Faculty Guide and School Dean

This is to certify that Mr. Manshu Butta working on the research naming “Risk Identification and Management for Clinical and Non- Clinical Departments in LLH Hospital Musaffah, Abu Dhabi” in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his approach to the research study has been sincere, scientific and analytical.

Faculty Guide

IIHMR University, Jaipur

Date:

School Dean

IIHMR University, Jaipur

Date:

ABSTRACT

Title – A study on “Risk Identification and Management for Clinical and Non- Clinical Departments in LLH Hospital Musaffah, Abu Dhabi”

Submitted By – Manshu Butta

Guided By – Dr. Susmit Jain

Background - In Hospital and Healthcare Industry, risk can be stated as: The probability of event or action that can harm patients, visitors or staff and can result as a negative impact on the organization. Identification and management of risk will provide invaluable opportunities to improve on Hospital Quality of care, performance, patient and staff safety. The diversity of collected risks from hospital departments helps to formulate strategies on the basis of risk assessment. Through periodic monitoring and maintenance of risk register, one can minimize the adverse events that can have a negative impact on hospital. Thus, it is essential for a healthcare organization to develop, maintain and implement a framework for risk management.

The types of risks are:

Clinical Risks - The risk of a negative event occurring that involves patients and patients care processes includes but not limited to (patient safety assessment of patients care of patients, medication management and use patient rights and education as well as near miss and sentinel events).

Administrative Risks - This category comprises internal and external risks that are related to the organization activities and sustainability such as: (compliance with national /local and international regulations, compliance with hospital policies and procedures, staff competency, hospital assets and resources as well as risk that might damage to reputation, and public confidence as a result of litigation or from failures in organizational processes).

OSH Risks - OSH related risks including risks related to the hospital environment of care, occupational health and hospital amenities such as (facilities and medical equipment, utility management, fire safety systems, security measures and emergency management and response).

The aim of the LLH Hospital is to ensure having sound risk management encompassing effective and holistic assessment of the risk that hospital is facing by:

- Working within and across services provided by professional disciplines.
- Encouraging team working
- Implementing qualitative and quantitative standards and indicators with which performance can be monitored and evaluated.
- Implementing quality improvements
- Providing organizational structure and resources to support all staff in exercising their risk management responsibilities.

With this backdrop the research was carried with the objective to

- To identify and describe the risk of various non-clinical departments for managing the risk register.
- To identify the nature of the risks.
- To determine the organization's competence for mitigating the risk which were identified through existing controls.
- To prioritize the risk based on the likelihood and consequence of the reported incidence.
- To propose additional risk management strategies for combating the stated risks.

The research is Observational cross-sectional study and was conducted at a 80 bedded hospital in Musaffah, Abu Dhabi, UAE. The study was carried out between 01 April 2022 to 20 June 2022. In the study the risk of 14 clinical and non-clinical departments of the hospital was identified, risk management strategies were assessed. The data was collected and recorded in Risk-register template with the help of brief discussions, semi-structured interviews with the staff and HODs of the concerned departments and also thorough observation and tracking of incident or occurrence variance reports of the concerned departments.

Result –

A risk management system should be implemented in Hospital in order to control the prevalence or incidence of the risk. A risk register implemented for each department to mitigate the existing risk and control the future risk.

Total of 81 risks were identified from 14 clinical and non-clinical departments of the hospital. Maximum number of risks related to patient/employee safety. Based on the Impact and Probability Scale, Risk

Priority number was obtained, 81 risk identified, Out of which 11 were extreme risk, 23 were high risks, 47 were moderate risk. As per the degree of risks, certain initiatives will be taken at the hospital.

One initiative is to implement the Risk Management Plan. It covers all outpatient, in-patients and diagnostic services. Risk management activities includes:

- A proactive process to evaluate near misses and other high-risk processes for which a failure would result in a Sentinel Event.
- High-risk processes are redesigned based on the analysis of the test results.
- Occurrence and Sentinel Event Reporting.
- Root Cause Analysis of confirmed Sentinel Events and major incidents.
- Managerial monitoring including those aspects of the prevention and control of events that jeopardize the safety of patients, families and Hospital staff.
- Monitoring medication management issue such as Medication Errors and Near Misses.
- Facility management and safety plans, describing the processes to manage risks to patients, families and staff (safety and security, hazardous materials, emergencies and fire safety, medical equipment and utility systems.
- Emergency preparations and Disaster Planning.
- Prevention and Control of Infection – procedures and processes associated with the risk of infection and implementation of strategies to reduce infection risk.
- Credentialing and privileges practices.

Acknowledgements

A successful project is a combination of our efforts, encouragement, guidance from the experienced people, express my acknowledge and extend heartfelt recognition to the following individuals, who make the project possible.

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Sincerely,

Mr. Manshu Butta

Roll No -

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ABBREVIATIONS

HOD	HEAD OF DEPARTMENT
FMS	FACILITY MANAGEMENT SERVICE
HSE	HEALTH, SAFETY AND EDUCATION

OSH	OCCUPATIONAL, SAFETY AND HEALTH
RPN	RISK PRIORITY NUMBER
FMEA	FAILURE MODE AND EFFECT ANALYSIS

CHAPTER 1 – INTRODUCTION

Over the previous four decades, the healthcare industry in the UAE has grown in a positive way. The UAE has only 7 hospitals and 12 health centres when it was founded in 1971. According to the most recent statistics from the UAE statistics authority, there were 126 public and private hospitals in the UAE as of 2015, with a total bed capacity of more than 12,000; as a result, the risk to patients, staff, and other hospital departments is also on the rise in the healthcare sector. In order to assess, create, implement, and track risk management strategies with the aim of limiting exposure, an organisation must have a dedicated hospital risk management system. A healthcare company has numerous priorities, including finances, safety, and patients, who come first.

The risk in a hospital setting is substantial and constantly shifting. The systematic study of current and future hazards, as well as the creation and implementation of countermeasures, are necessary for risk management.

The following headings are included in the risk register template that was utilised for the study..

- Name of Department
- Location/ Activity
- Hazard
- Risk
- Risk Rating
- Control Measures



Figure 1. - RISK REGISTER DEVELOPMENT PROCESS

AIM AND OBJECTIVES

AIM : To improve the work efficiency by studying risk assessment

OBJECTIVES:

- To recognise and explain the risk associated with various non-clinical departments for the purpose of monitoring the risk register.
- To determine the hazards' nature.
- To assess the organization's proficiency in reducing risks that were discovered through existing controls.
- To rank the risk in accordance with the likelihood and impact of the stated incidence.
- To suggest additional risk management tactics to tackle the dangers mentioned.

CHAPTER 2 - LITERATURE REVIEW

<u>Review of the Article (Author name)</u>	<u>Year of the study conducted and where it was conducted.</u>	<u>Outcome of the study</u>
Analysis of risk and assessment of safety hospitals against disasters: A systematic review. Author Name – Seyed Morabi Moradi, Naser Hasheminejad Ahmad Abbasnejad,	2021 in India	Focuses on conducting risk analyses studies and assessing safety because if not consider then can result in irreplaceable damage.
Vulnerability and healthcare hazard analysis: an assessment of all public hospitals in Abu Dhabi. Author name – Sale Fares, Assaad Sayah Meg Femino	<u>2014 in Abu Dhabi</u>	HVAs were conducted successfully for the first time in health care facilities in Abu Dhabi. This study thus serves as another successful example of multidisciplinary emergency preparedness processes.
A framework to support risk assessment in hospitals Author Name – Gulsum Kubra Kaya James R Ward P John Clarkson	<u>September 2018</u>	

CHAPTER 3 – METHODOLOGY

- ❖ **Study type** – Observational Descriptive Study
- ❖ **Location of study** – LLH Hospital, Musaffah, Abu Dhabi
- ❖ LLH Hospital Musaffah, a unit of **VPS Healthcare** The most cutting-edge secondary care facility in Musaffah, Abu Dhabi's business centre, is the LLH Hospital Musaffah, which opened its doors in 2008. It exemplifies the typical convergence of elite personnel, innovative technology, cutting-edge infrastructure, and most importantly, an unwavering dedication to patient care. Only this hospital, which meets the international health quality standard for patient care and organisational management, has been accredited by Joint Commission International, a US institution.
- ❖ **Study Duration** – 1st April – 20th June
- ❖ **Collection of data:**
 - **Primary:**
 - Semi-structured Interview process
 - Observational Study
 - **Secondary:**
 - Occurrence Variance Reports and incident reports
- ❖ **Instrument used for the study** – Risk Assessment tool and MS Excel
- ❖ **Study Area** – Clinical and Admin Departments
 - **Laboratory**
 - **Pharmacy**
 - **Radiology**
 - **Operation Theatre**
 - **All Reception areas (Front Office)**
 - **Human Resource**
 - **IT Department**
 - **Electrical Room**
 - **SARS COVID-19 RISKS**

OPERATIONAL DEFINITION:

Risk is the likelihood or threat of damage, liability, or injury brought on by vulnerabilities and which can be eliminated through proactive measures. An organised attempt to detect, evaluate, and minimise risks to clients, guests, employees, and organisational assets is known as risk management for entities.

The risk in a hospital setting is substantial and constantly shifting. The systematic study of current and future hazards, as well as the creation and implementation of countermeasures, are necessary for risk management.

1. **Risk:** Risk is the likelihood that an event will take place and have an impact on the hospital's goals. It is evaluated in terms of likelihood and effect. Clinical risk is a risk connected to patient diagnosis and care. Legal risk, which relates to hazards from breaking the law, as well as risk from ineffectively implementing policies and procedures, poor communication, inadequate staffing, and weak management structures, are examples of non-clinical risks. Financial and business risks include those related to revenue, IT infrastructure, contracts and service agreements, and threats to the organization's capacity to carry on with its regular operations. All administrative and corporate tasks involve information risk, hence information risk management must be introduced and integrated into these processes.
2. **Hazard:** A hazard is anything that might be harmful.
3. **Probability:** A gauge of how likely it is that the hurt, loss, or damage will materialise.
4. **Consequence:** A measurement of the effect that the anticipated loss, hurt, or damage would have on the impacted individuals, properties, or goals.
5. **Risk Management:** The process of eliminating or minimising hazards.
6. **Risk Treatment:** to reduce the risk
7. **Risk Assessment:** Risk assessment is the technique used to analyse the risk or hazard and decide whether the current protections are sufficient or whether further action is necessary. The risk is compared to previously established acceptable risk thresholds.

HSE/OSH Department Responsibilities in Hospital -

- The primary responsibility of the OSH Officer/OSH Manager is to maintain and supervise some risk assessment schedule and programme.
- Organize OSH committee meeting and ensure performance of OSH hazard assessments for all activities.
- Participate in the identification of the hazards.
- Assist in evaluating the risk resulting from the presence of these hazards.
- Ensure the implementation of identified existing or recommended control measures to prevent those hazards or to reduce them to ALARP.

OSH Committee: This Committee is responsible for focusing and co-ordinating Health and Safety, clinical and non-clinical risk auditing

What is OSHMS Occupational Safety Health Management System??

An organised and methodical strategy to managing risk for occupational health and safety is called an OSHMS. Organizations may maintain compliance with health and safety laws and standards and enhance their safety performance with the aid of OSHMS. OSHMS comprises of

- OHS Policy
- OHS Objectives & Targets

- OHSMS Manual review
- Risk Management program / procedure
- Legal & other requirements procedure
- Performance monitoring & Response
- Emergency Response & Management
- Audit & Inspection
- Management of Contractors
- Training & Competence
- Consultation & Communication
- Control of documents & records
- Management review
- Operational Procedures

Risk Categories:

Clinical Risks - The risk of a negative event occurring that involves patients and patients care processes includes but not limited to (patient safety)

Administrative Risks - This category comprises internal and external risks that are related to the organization activities and sustainability such as: (compliance with national /local and international regulations, compliance with hospital policies and procedures, staff competency, hospital assets and resources)

OSH Risks - OSH related risks including risks related to the hospital environment of care, occupational health and hospital amenities such as (facilities and medical equipment, utility management, fire safety systems, security measures and emergency management and response).

Some essential components of risk management include:

1. Risk identification
2. Risk prioritization
3. Risk reporting
4. Risk management/ risk analysis
5. Management of related claims

Risk Identification: In order to identify and detect risks that could potentially threaten or prevent the hospital goals and activities, LLH hospital integrate the following approaches.

Incidents reporting: occurrence variance reports are extremely encouraged to facilitate risks identification at earliest, (ref to OVR policy).

Inspections and internal audits: observation related to clinical, administrative and OSH related risks during inspections, internal and external audits activities are documented and communicated to concerned departments and committees subsequently, and integrated to the risks register to further management.

Risk Prioritization/Risk Assessment:

OSH risks are identified in line with the OSH risk management procedure.

Infection Control risks will be assessed by the Infection Control Department as per the below scoring matrix.

There are many instances other than regular review when a risk assessment done. For example

- Whenever a new hazard has been introduced, (eg, commissioning new equipment item)
- A incident (including a near miss has occurred)
- When a new activity involving significant risk is planned.
- Pre-construction risk assessment
- Joint risk assessment with vendors

Administrative and Clinical Risks reported by OVR form were assessed by the Quality Department as per the risk scoring matrix provided below:

Severity Scoring (Impact):

Severity Score	1	2	3	4	5
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Descriptor	Insignificant	Minor	Moderate	Major	Catastrophic
What is the potential severity of the outcome of the risk should be occur.	Damage/ Loss of equipment.	Small financial loss. Minor Delay in achieving objectives. Minor loss/damage to equipment	Short term delay in achieving objectives. Short term loss/ damage to equipment.	Interruption to business. Long term delay in achieving objectives. Major financial loss.	Huge business loss interrupting business continuity. Devastating loss of reputation for the organization or the individual involved. Complete failure.

Likelihood Scoring (Probability)

Descriptor	Likely Frequency			Probability
	Environment	Health and Safety	General (Administrative, Clinical and Infection Control)	
Frequent	Continuous or will happen frequently.	Occurs several times a year at location.	Will undoubtedly happen/recur, possibly frequently	5
Often	6-12 times per year	Occurs several times a year in similar industries in UAE	Will probably happen/recur but it is not a persisting issue	4
Likely	2-5 times per year	Has occurred at	Might happen or	3

		least once in UAE.	recur occasionally	
Possible	Once every 5 years	Has occurred in industry (Worldwide).	Do not expect it to happen/recur but it is possible it may do so	2
Rare	Less than once every five years.	Never encountered in industry.	This will probably never happen/recur	1

Risk Analysis (Risk Score):

Risk Analysis = Severity x Likelihood (S x L)					
	Likelihood Score				
	1	2	3	4	5
Severity Score	Rare	Possible	Likely	Often	Almost certain
5 Catastrophic	5	10	15	20	25
4 Major	4	8	12	16	20
3 Moderate	3	6	9	12	15
2 Minor	2	4	6	8	10
Insignificant	1	2	3	4	5

For grading risk, the scores obtained from the risk matrix are assigned grades as follows

1 - 3	Low risk
4 - 6	Moderate risk
8 - 12	High risk
15 - 25	Extreme risk

Risk Reporting:

- Occurrence and Sentinel Event Reporting
- Ensure all components of the risk management system are maintained according to policy and procedure with appropriate reporting within the risk management structures.
- Reporting any hazards associated with the working environment, work tasks or activities to their supervisor/operation manager as soon as becoming aware of

them.

- Ensure that risk management is an integral part of the organizational culture, and that incident reporting is based on the concept of “no blame”
- Incidents reporting: occurrence variance reports are extremely encouraged to facilitate risks identification at earliest.

Risk Treatment and Control:

Risk Treatment: Risk Treatment is the process of selecting and implementing of measures to modify risk, take correction or preventive action.

5I's risk treatment process (RCA): 5 I's Approach in five steps is followed with identified risks:

Investigate	Risks identified and occurrence variances are investigated ,root cause analysis (where applicable) is performed and contributing factors are highlighted
Inform	Identified risks are communicated with concern staff at management or supervisory level as applicable
Influence	Culture of safety and risk awareness is promoted through staff trainings
Interprets	Results of investigation and risk assessment are shared and interpreted to take appropriate corrective and preventive actions
Integrate	Investigations, feedback, corrective and preventive actions taken are documented in hospital risk register and integrated with quality and patient safety plan to promote and sustain safe practices ,

Reactive Risks Management Approach (PDCA) LLH hospital will maintain and manage risks within tolerable limits by identifying hazards and performing risk management through continually implementing PDCA (Plan-Do-Check-Act) cycles for priority improvement areas or high scored risks.

Plan: safety and risk reduction principles

Do: corrective actions and action plans developments communicate and educate the staff accordingly

Check: through inspections, internal and external audits

Act: review the risk reduction accordingly

Risk Control and Proactive Approach (FMEA): The organization shall use Failure Mode and Effect Analysis (FMEA) as a proactive reduction tool to develop risk mitigation strategies with the goal to reduce or eliminate the potential harmful impact of known or possible risks. The organization shall

utilize this tool annually on a high-risk, high volume or problem prone process in order to reduce the failures in a process that could result in a Sentinel Event. The process for FMEA shall be selected through multi-voting during Executive Committee and use of priority grid.

The following 9 steps shall be used in the FMEA process:

1. Construct a detailed flowchart of the process.
2. Determine how each step could possible fail (failure mode)
3. Determine the “effects” of each possible failure.
4. Assign a severity rating for each effect
5. Assign an occurrence rating for each failure
6. Calculate and prioritize a risk priority number for each failure.
7. Review the process and Risk Priority Number (RPN)
8. Take action to eliminate or reduce the RPN by redesigning the process
9. The above process shall be conducted by a team/task force of relevant stakeholders and facilitated by the Quality department and shall be documented. The RPN after process redesign shall be evaluated.

Some of the major Internal training conducted in hospital are:

- OSH Induction for all new joiners
- Global Harmonized system for the management of Hazardous Material.
- Fire Safety Awareness
- Covid – 19 Risk Assessment
- Covid – 19 related protocols
- Competency based trainings (Electrical Safety, Radiation Safety and Lab Safety etc.)

What is Hazard?

Hazard : Hazard is something with the potential to cause harm.

Examples : - Chemical , Noise, Radiation, Electrical, Lighting, Vibration, Temperature, Biological & Physical

How to recognize Hazardous Chemicals?

- **Read labels on containers.**
- **Pay attention to posted warning signs**

- Read Material Safety Data Sheets (MSDS)

Material Safety Data Sheet (MSDS) –

Material Safety Data Sheet (MSDS)

MSDS is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product

Material Safety Data Sheets [MSDS]

- Provides information on the chemical and physical properties of the chemicals with which you may be working
- Also provides guidance on the proper protective equipment and emergency procedures for each chemical
- MSDS should be kept near the area where chemicals are being stored for quick reference

MSDS Sheet comprises of:

1. Identification of the Product and the Company
2. Identification of Hazards
3. Ingredients and Composition Information; 4. First Aid Procedures
5. Steps to Fight Fires
- Measures for Accidental Release
7. Storage and Handling
8. Personal safety measures and exposure controls
9. Chemical and physical characteristics
10. Reactivity And Stability
11. Information on toxicity
12. Environmental Data
13. Considerations for Disposal
15. Regulatory Information
16. Other Information
17. Transport Information

RISK ASSESSMENT – ADMIN DEPARTMENT

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01	Computer workstations	Employees use computers more than 4 Hours.	Pain and discomfort	3	3	9	(i) Should avoid repetitive work

			Eyes may occur from screen glare or if lighting is poor.				repeatedly away from their workstation.
03.	Electrical energized equipments.	Electrical conductance	Electrical faults also leads to fire.	2	3	6	(i) Introducing a permit to work system. (vi) Ensure electric equipment is properly ground as per the required standard. (vii) Developed and implemented effective lockout procedure when doing maintenance on electric equipment.

04.	Storing of files	Records stored open racks & above rack	(i) Risk of falling objects & injury. (ii) Risk dust accumulation on the open records and inhalation by staff	2	2	4	(i) Cupboards provided for the storage of files. (ii) Maintaining Good Housekeeping. (iii) Storage not allowed above the cupboards.
05.	Office Routine Work	Paper Use	Consumption of natural Resources	2	2	4	(i) Reduce, Reuse & Recycle - principle used in the office. (ii) Monitoring by store department usage of paper consumption. (iii) Included in Hospital Target and Objectives
06.	PC, Printer Use	Electronic waste	Environment Pollution	2	2	4	Returned to supplier for refilling (reuse)

07.	Air Quality	Polluted Air	Eye, Throat Nose Irritation, Headaches and Tiredness.	2	2	4	(i) Mechanical or forced ventilation is provided by air movers or fans in the wall, roof or Air-conditioning system of a building. It promotes the supply or exhaust air flow in a controllable manner. All faults are reported immediately for the maintenance. (iii) Regular inspection of the air provision system by in house team. (iv) Proper Housekeeping. (v) Proper PPM'S of the air circulation system. (vi) Annual Air quality check by third party in the Hospital.
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08.	Admin Area	Paper , Wood, Electricity and Other Combustible items	Risk of Fire	3	5	15	(i) An adequate number of exit routes. (ii) An employee alarm system is provided. (iii) Fixed extinguishing systems are provided. (iv) Fire Detection systems provided. (v) Keeping sources of ignition and flammable substances apart. (vii) External contract to check the fire suppression system in the Facility. (Viii) In emergency ambulance available to shift the patient to other near Hospital. (ix) Ensuring good housekeeping at all times. (x) Emergency Code developed for the easy and effective communication. (xi) Fire safety training to the staff. (xii) Fire mock drill conducting and Full hospital Evacuation. (xiii) Routine inspection of the facility. (xvi) Civil defense no.
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							available in the communication
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09.	Work overload	Stress	Work related stress may lead to physical or mental illness.	3	3	9	(i) Staff undergone stress management training. (ii) Staff can talk to supervisors or manager if they are feeling unwell or un-easy about things at work. (iii) Effective and confidential communication system. (iv) Regular job related refresher training provided. (v) Achievable work targets. (vi) Resources providing with increase of work. (vii) Effective leave Management. (viii) Strategies requirement to encourage staff to participate in decision making. (ix) Reallocating tasks and increasing resources. (x) Clearly defined employee's roles and responsibilities. (xi) Giving employee's opportunities to participate in decisions and to take action. (xii) Ensuring the workload in line with employee's capabilities and resources.
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10.	Movements in the Office	Slips & Trips	Slips and trips that may lead to injury	2	2	4	(i) General good housekeeping. (ii) All areas well lit. (iii) No trailing leads or cables. (iv) Prompt cleaning every time. (v) Staff clean as they go, spills and breakages cleared promptly and the floor cleaned to dry. (vi) Regular checks and repairs of any crack and chipped floor tiles. (vii) Staffs keep work areas clear, eg no boxes left in walkways, deliveries stored immediately. (viii) Well trained staff is there to control and assist the patients and visitors.
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11.	Admin area	Noise	Staff may be exposed to high levels of noise, inducing hearing loss	2	2	4	(i) Regular Maintenance of equipment. (ii) Providing audiometric testing where necessary.
12.	Admin area	Stacking & Storage	Staff injuries from material falling on staff due to improper stacking and storage.	2	3	6	(i) Ample storage space and shelving is provided. (ii) Office personnel trained in the storage and stacking of materials. (iii) Regular inspection of storage areas. (iv) Regular maintenance checks on the condition of the shelving or storage facilities.
13.	Admin area	Violence	Staff may suffer assaults, threats and abuse from members of the public	2	2	4	(i) Proper identification by ID Badges. (ii) Security provided at all floors and entrance. (iii) Proper customer care support provided. (iv) Maintaining confidentiality. (v) CCTV Installed at all places and monitored by security. (vi) Staff trained to provide good polite service to all customer and how to handle crowded situation. (vii) Cash is not displaying openly and keeping in the proper lockers.

							(vi) Cash is transferring to bank with proper security person.
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14. Hospital Vide	Violence in the workplace	Staff may suffer assaults, threats and abuse from co-staff of the Hospital	2	3	6	(i) Job rotation to reduce the amount of time workers are stressful. (ii) Provided lockers to store to valuable items to avoid the lost of valuable items. (iii) Prohibiting staff from alcohol drinking and drug consumption. (iii) Provision of good work place design. (iv) Commitment from top management and support for staff actions that aim to create an environment free from violence. (v) Informing to staff about the policy and procedures affect. (vi) Preventing, controlling and eliminating violence through good environmental design, job design and training. (vii) Information about arrangements for consultation, monitoring and review of the policy, as well as how the policy will be communicated to staff. (viii) Proper security arrangement, access controls and CCTV monitoring.
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15. Admin area	Lone Work	Staff could suffer injury or ill health while working alone	2	2	4	(i) Security staff checks all area at night. (ii) Whereabouts of staff 'out of the office' is monitored by supervisor. (iii) Effective Communication system. Provision of First aid box.
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RISK ASSESSMENT – IT AREA

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	IT Server Room	Split Ac in Serverroom	(i) Chances of Fire due to continuous running of Split A/C (i)Electric interruptiondue to water leakage from split A/C	4	4	16	(i) Proper PPM of split a/c. (ii) Continuous monitoring by IT staff and maintenance team. (iii) Temperature alerts tomobile.
02.	IT Server room	9-Year-old server so chances of technical failure ofactive directory	Failure of network communication between theinterconnected systems acrosshospital	2	4	8	Temporary server available in corporate for emergency purpose
03.	IT Server room	Lack of High availability firewall	(i) Cyber threat (ii) Internet availabilityand filtering	2	5	10	(i) Spare firewall available in the corporate to control cyber threat and filtering of authorized websites. (ii) Support from firewall vendor 24X7 Hrs.
04.	IT Server room	Lack of High availability of core Switch	Network failure	3	5	15	(i) Spare core switch available inthe corporate. (ii) Support from CISCO vendor.
05.	IT Server room	Lack of MPLS High availability	(i) Interconnectio nbetween the VPS Facilities and data center. (ii) DR Server streaming will be failed.	1	3	6	Contract with “Etisilat telecom” with 24X7 support

RISK ASSESSMENT - All Reception Counters (For Front Office Staff)

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	All Receptions	Workstation & Chairs.	Risk of Ergonomic Hazards - Neck Pain /back Pain.	3	3	9	(i) Provide ergonomically correct workstations & chairs. (ii) Training on Ergonomics Safety. (iii) Frequent breaks for staff. (iv) Providing Off days after when working more than recommended hours. (v) Provision of adjustable, supportive padded chairs that support the forearms, legs, and low back. Arm rests should allow the elbows to hang normally at the side of the body.
02.	Reception Counters	Display Screen Equipments	Headaches or sore eyes may occur from screen glare or if lighting is poor.	2	3	6	(i) Staff takes short, frequent breaks away from their workstation. (ii) Proper lighting provided at all workstation for reading from the screen, keyboard work, reading printed text, writing on paper. (iii) General lighting by artificial or natural light illuminating the entire rooms and corridors as per adequate standards. (iv) Work arranged so that staff do not use computers for continuous, long periods without breaks. (v) Eye tests

							provision on request of employees. (vi) Any supplementary lighting requirements, provision to provide for personal needs or particular task.
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03.	Crowded and emotional situations that can occur with emergencies	Workplace violence is an issue.	Employee at an increased risk of workplace violence	3	4	12	(i) Security staff is present to handle the situation. (ii) Counseling and treatment for employees who have experienced workplace violence. (iv) CCTV camera fitted for monitoring. (vi) Training on handling violent situation. (vii) Conducting mock drill how to handle violence situation. (viii) All staff are made aware of the factors which place them at risk from patients. (ix) Staff are experienced in assessing body language and other cues, to help identify those who may become violent or abusive.
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04.	Encounter with Infected Patients	Healthcare Associated Infection	Exposure to healthcare infectious disease and agents leading to personnel being infected.	2	3	6	(i) appropriate use of cleaners and disinfectants. (ii) Improved hand and personnel hygiene. (iii) Safe use of disposal and sharps. (iv) Proper training in the prevention of exposure. (v) Proper and safe disposal of PPE. (vi) Proper and effective ventilation for specialized care environments (e.g., airborne infection isolation rooms) (vii) Alerting and Providing information about latest communicable diseases as per WHO information. (viii) Use of PPE.
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05.	All Passage ways.	(i) Loose and uneven flooring surface. (ii) Building structure.	Trip / Fall of patient/visitor/contractors/staff	2	2	4	(i) Keeping all places of employment clean and orderly and in a sanitary condition. (ii) Keeping exits free from obstruction. Access to exits remains clear of obstructions at all times. (iii) Using prudent housekeeping procedures such as cleaning only one side of a passageway at a time, and provide good lighting for all area, to help reduce accidents. (iv) Eliminated cluttered or obstructed work areas. (v) Signage sticker on the floor / floor is coated with rubber mat. (vi) Anti skid mat spread on the floor.
06.	All OPD's & Customer care	Musculoskeletal disorders/Ergonomic factors	Pain, discomfort or injuries, eg to their hands, arms, back etc. from overuse/improper use poor body posture or from poorly designed workstations or work environments.	2	3	6	(i) Ergonomically designed work stations with lumbar supported chairs provided. (ii) Avoiding repetitive work or taking regular breaks or workstation changes. (iii) Using the right tool for the right job. (iv) Provision of ergonomically designed equipment.

07.	Work overload	Stress	Work related stress may lead to physical or mental illness.	2	2	6	(i) Staff undergone stress management training. (ii) Staff can talk to supervisors or manager if they are feeling unwell or un-easy about things at work. (iii) Effective and confidential communication system. (iv) Regular job related refresher training provided. (v) Achievable work targets. (vi) Resources providing with increase of work. (vii) Effective leave Management. (viii) Strategies requirement to encourage staff to participate in decision making. (ix) Reallocating tasks and (vi) increasing resources.
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08	Illumination.	No Natural light in the department.	Eye Stress/Fatigue/Eye sight.	2	2	4	(i) Using daylight bulbs or fluorescent tubes for colour recognition tasks. (ii) Sufficient lights and well distributed in the area. - lighting colour suitable for the activity. (iv) Lux level test conducted by third party and maintaining (iii) correctively.
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12.	Electrical energized equipments.	Electrical	Electrical shocks or burns using faulty or damaged electrical equipments. Electrical faults also leads to fire.	2	3	6	(i) Introducing a permit to work system. (ii) Staff trained to spot and report any defective plugs, discolored sockets or damaged cable/ equipment. (iii) Defective equipment taken out of use safely and promptly replaced. (iv) Staff informed not to bring in their own appliances. (v) Ensured electric equipment is properly Insulated to the required Standards. (vi) Ensure electric equipment is properly ground as per the required standard. (vii) Developed and implemented effective lock out procedure when doing maintenance on electric equipment.
13.	Corridors and Front Office Area	Paper , Wood, Electricity and Other Combustible items	Risk of Fire	3	5	15	(i) Keeping sources of ignition and flammable substances apart (ii) Ensuring good housekeeping at all times. (iii) Installed smoke alarms and fire alarms or bells. (iv) Appropriate training on procedures are there, including fire drills. (v) Keeping adequate no. of fire exits and escapes routes clearly marked and unobstructed at all times. (vi) Availability of correct fire-fighting equipment for putting a fire out quickly. (vii) Assuring that all devices and equipment constructed and installed to comply with the standard are approved for the purpose for which they are intended. (viii) Assuring that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain

							proper reliability and operating condition. (ix) Training on Fire Safety by conducting Fire and evacuation mock drills.
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14.	Front Desk	Exposure to low level noise (ringing phones, equipment generated noise, non-relevant conversations of colleagues in open plan offices)	(i) Fatigue and inefficiency. (ii) Impaired concentration. (iii) Increased mental and emotional strain	3	2	6	(i) Frequent breaks to the staff. (ii) Limiting the time people spend in noisy areas. (iii) Designing and laying out the workplace to create quiet workstations. (iv) Improved working techniques to reduce noise levels. (v) Providing health surveillance for all our employees who are likely to be frequently exposed above the upper exposure action values, or are at risk for any reason.
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RISK ASSESSMENT – LABORATORY

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	Transferring of chemicals	Chemical spillage	Health effects such as respiratory problems, allergies or dermatitis and environmental effects.	2	3	6	(i) Presently using PPE and transferring chemicals in the LAB. (ii) Chemical Spill Kit is provided. (iii) Transferring the Chemicals in trays.
03.	LAB	Storage of waste material in the dustbin for prolonged period	Health effects such as respiratory problems, allergies or dermatitis.	2	2	4	(i) Waste clearing three times a day. (ii) Dedicatedly monitoring by Housekeeping supervisor. (iii) Proper air circulation by centralized ventilation and split A/C system.

04.	Using autoclave machine	Bad smell and ventilation in the autoclave room	Stinking smell / Effects the health and environment.	2	2	4	(i) Proper ventilation provided. (ii) Separate place provided for the Autoclave. (iii) Proper Air Circulations
05.	Testing of human fluids.	Exposure of laboratory employees to blood borne pathogens while handling contaminated lab samples such as blood or other body fluids	Infection	3	4	12	(i) Getting Training on regular basis (ii) Using PPE (iii) Provide effective engineering and work practice controls to help remove or isolate exposures to blood and blood borne pathogens (iv) Employers must offer the Hepatitis B vaccination
06.	While examining the blood, urine etc.	Employee exposure to static postures from long periods of sitting or standing, or repetitive motions if sorting samples.	Getting WRULD	3	4	12	(i) Rotate tasks or minimize the amount of time spent at these tasks. (ii) Install automated tract delivery systems for specimen processing to minimize employee reaching and repetitive motions. (iii) Provide supportive comfortable chairs that include foot rests.
10.	Air Quality	Contaminated air was reaching the workers	Eye, Throat Nose Irritation, Headaches and Tiredness.	3	4	12	(i) Mechanical or forced ventilation is provided by air movers or fans in the wall, roof or Air-conditioning system of a building. It promotes the supply or exhaust air flow in a controllable manner. (ii) All faults are reported immediately for the maintenance. (iii) Regular inspection of the air provision system by in house team. (iv) Proper Housekeeping. (v) Proper PPM'S of the air circulation system.

11.	Handling Glass objects	Breakage	Cuts from broken glass or from	3	2	6	(i) Using PPE (ii) Regular training on the
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			clearing up				correct use and disposal of glass products. (iii) Training of PPE. (iv) Regular monitoring on the correct use and disposal of glass products.
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12.	Electrical energized equipments.	Electrical	Electrical shocks or burns using faulty or damaged electrical equipments. Electrical faults also leads to fire.	3	4	12	(i) Introducing a permit to work system. (ii) Staff trained to spot and report any defective plugs, discolored sockets or damaged cable/ equipment. (iii) Defective equipment taken out of use safely and promptly replaced. (iv) Ensured electric equipment is properly Insulated to the required Standards. (v) Ensure electric equipment is properly ground as per the required standard. (vi) Developed and implemented effective lock out procedure when doing maintenance on electric equipment.
13.	LAB	Equipment or Machinery	Improper /Unsafe use of equipment or machinery may lead to injuries.	2	3	6	(i) Staff are trained in the proper use of Lab equipment. (ii) Proper maintenance is done on all equipments. (iii) The use of PPE. (v) Regular inspection of equipment for any defect, damage or breakage by BME or vendor.

14.	Workplace surroundings.	Fire	Can cause fire. If trapped, staff could suffer fatal injuries from smoke inhalation or burns.	3	5	15	(i) Keeping sources of ignition and flammable substances apart (ii) Ensuring good housekeeping at all times. (iii) Installed smoke alarms and fire alarms or bells. (iv) Appropriate training on procedures are there, including fire drills. (v) Keeping adequate no. of fire exits and escapes routes clearly marked and unobstructed at all times. (vi) Availability of correct fire-fighting equipment for putting a fire out quickly. (vii) Assuring that all devices and equipment constructed and installed to comply with the standard are approved for the purpose for which they are intended. (viii) Assuring that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition. (ix) Training on Fire Safety by conducting Fire and evacuation mock drills.
15.	Using Gloves	Latex Gloves	Exposure to the wearing of latex gloves may cause skin irritation in latex sensitive individuals.	2	3	6	(i) Using Latex free gloves. (ii) Following proper Hand Hygiene. (iii) When wearing latex gloves, not using oil-based hand creams or lotions (which can cause glove deterioration) unless they have been shown to reduce latex-related problems and maintain glove barrier protection.

16.	All Lab Staff	Musculoskeletal disorders/Ergonomic factors	Pain, discomfort or injuries, e.g to their hands, arms, back etc. from overuse/improper use poor body posture or from poorly designed workstations or work environments.	3	3	9	(i) Ergonomically designed work stations with lumbar supported chairs provided. (ii) Avoiding repetitive work or taking regular breaks or workstation changes. (iii) Using the right tool for the right job. (iv) Provision of ergonomically designed equipment.
17.	Waste Handling	Bio Hazard Waste	Contact with improper managed Biohazard waste leading to infection/contamination including negative effects to the environment.	3	3	9	(i) Immunization/ vaccination of Waste handling personnel. (ii) Waste is handled and collected by trained outsourced cleaning staff with necessary PPE. (iii) Waste is separated in different categories at source. (iv) Waste is collected by licensed waste removal company. (v) Waste is collected on regular frequency. (vi) Waste containers are removed before over filled. (vii) Proper separation of domestic and medical waste with different colored bags. Staff trained in the proper / safe handling, segregation and disposal of waste.

RISK ASSESSMENT – PHARMACY

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	Working on Computers	Display screen equipment Hazards	(i) Headaches or sore eyes may occur from screen glare or if lighting is poor. (ii) Fatigue/Stress.	3	3	9	(i) Work arranged so that staff don't use computers for continuous, long periods without breaks. (ii) General lighting by artificially illuminated the entire room to an adequate standard. (iii) Staff takes short, frequent breaks away from their workstation.

							(iv) Eye test provided for those who want them.
02.	IP Pharmacy	Latex Gloves	Exposure to the wearing of latex gloves may cause skin irritation in latex sensitive individuals.	2	3	6	(i) Using Latex free gloves. (ii) Following proper Hand Hygiene. (iii) When wearing latex gloves, not using oil-based hand creams or lotions (which can cause glove deterioration) unless they have been shown to reduce latex-related problems and maintain glove barrier protection.
03.	IP Pharmacy	Stress	Work related stress may lead to physical or mental illness.	3	4	12	(i) Staff undergone stress management training. (ii) Staff can talk to supervisors or manager if they are feeling unwell or un-easy about things at work. (iii) Effective and confidential communication system. (iv) Regular job related refresher training provided. (v) Achievable work targets. (vi) Resources providing with increase of work. (vii) Effective leave Management. (viii) Strategies requirement to encourage staff to participate in decision making.

04.	IP Pharmacy	Musculoskeletal disorders/Ergonomic factors	Pain, discomfort or injuries, e.g to their hands, arms, back etc. from overuse/improper use poor body posture or from poorly designed workstations or work environments.	3	3	9	(i) Ergonomically designed work stations with lumbar supported chairs provided. (ii) Avoiding repetitive work or taking regular breaks or workstation changes. (iii) Using the right tool for the right job. (iv) Provision of ergonomically designed equipment.
05.	IP Pharmacy	Hazardous Substances	Exposure or contact with Hazardous substances may lead to injury or ill health.	2	3	6	(i) All MSDS kept on the premises. (ii) Use of PPE. (iii) Proper training in the use of the Hazardous substance. (iv) Hazardous substance clearly identified with the relevant hazard warning symbols. (v) Provision of eye wash station. (vi) Regular monitoring and maintenance on the introduced control measures.
06.	Air Quality	Contaminated air was reaching the workers	Eye, Throat Nose Irritation, Headaches and Tiredness.	2	3	6	(i) Mechanical or forced ventilation is provided by air movers or fans in the wall, roof or Air-conditioning system of a building. It promotes the supply or exhaust air flow in a controllable manner. (ii) All faults are reported immediately for the maintenance. (iii) Regular inspection of the air provision system by in house team. (iv) Proper Housekeeping. (v) Proper PPM'S of the air circulation system.

07.	Electrical energized equipments.	Electrical	Electrical shocks or burns using faulty or damaged electrical points. Electrical faults also leads to fire.	2	4	8	(i) Introducing a permit to work system. (ii) Staff trained to spot and report any defective plugs, discolored sockets or damaged cable/ equipment. (iii) Defective equipment taken out of use safely and promptly replaced. (iv) Staff informed not to bring in their own appliances. (v) Ensured electric equipment is properly Insulated to the required Standards. (vi) Ensure electric equipment is properly ground as per the required standard. (vii) Developed and implemented effective lockout procedure when doing maintenance on electric equipment. (viii) EHS rep. conducting regular visual checks of plugs, sockets, cables and on /off switches.
08.	Workplace surroundings.	Fire	Can cause fire. If trapped, staff could suffer fatal injuries from smoke inhalation or burns.	3	5	15	(i) An adequate number of exit routes. (ii) An employee alarm system is provided. (iii) Fixed extinguishing systems are provided. (iv) Fire Detection systems provided. (v) Keeping sources of ignition and flammable substances apart. (vi) Evacuation Chairs for the patient evacuation. (vii) External contract to check the fire suppression system in the Facility.

							(Viii) In emergency ambulance available to shift the patient to other near Hospital. (ix) Fire safety training to the staff. (x) Emergency Code developed for the easy and effective communication.
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RISK ASSESSMENT – SARS COVID 19

Sl. No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	LLH Hospital Musaffah	Employee Exposure to SARS-CoV-2	Infection and spread of COVID-19 to Staff, patient and visitors.	4	4	16	Engineering Control Measure's - Fixed Physical barriers and Partitions in triage areas to guide patients. - Curtains separating patients in semi-private areas. - Provision of Airborne infection isolation rooms (AIIRs) with proper ventilation. - Isolating the patients in private rooms. - Isolation tents established as a portable containment structure as an alternative patient-placement facility. - Fumigation throughout the Hospital and Hospital vehicles will be performed on a regular basis accordingly were required and will be updated in the fumigation checklist and cleaning will be implemented throughout the hospital, ensuring that work surfaces, door handles, taps etc. are all thoroughly cleaned with an alcohol based antibacterial cleaning substance and also performed wherever terminal cleaning is required. Administrative Controls - Restrict the number of personnel entering the room of a patient with

							suspected or confirmed COVID-19. • Provided training for the appropriate use of PPE so they can perform tasks such as housekeeping and food service workers. • Staffs fever examination with thermal thermometer available in the hospital main entrance and if they have developed any symptoms regarding COVID - 19, then immediately follow the COVID-19 Process Flow of the hospital and DOH. • Provision of Training for all employees with reasonably anticipated occupational exposure to SARS-CoV-2 • Regularly communicating important information from CDC and WHO to concerned staffs. • Vulnerable staff Safe Work Practices • Preventing to touch contamination by avoiding unnecessary touching of environmental surfaces (such as light switches and door handles) with contaminated gloves. • Hand washing facilities with liquid soap and water in place. • Drying of hands with disposable paper towels or tissues. • Gel sanitizers allocated throughout the hospital areas for hand sanitization and hand rub process duration for hand hygiene should be carried out for 25 to 30 seconds. • Limiting opportunities for
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							touch contamination (e.g., adjusting glasses, rubbing the nose, or touching face with gloves that have been incontact with suspected or confirmed COVID-19 patients or contaminated / potentially contaminated surfaces). • Differentiating clean areas (e.g., where PPE is put on) from potentially contaminated areas (e.g., where PPE is removed) • Cleaning, disinfecting, and maintaining reusable equipment andPPE. • Keeping patient room doors always closed. Personal Protective Equipment • Wearing of appropriate PPE for clinical and non-clinical staffs as per the hospital COVID-19 PPE protocol is followed. • Allocated area for Donning and Doffing of PPE and its protocol to be followed in the hospital at all time.
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RISK ASSESSMENT – OPERATION THEATRE

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	Laser products used in surgery are class 4	Use of Medical Lasers	(i) Severe eye injuries from direct or reflected laser beams. (ii) Skin burns from the direct beam of surgical lasers when misdirected. (iii) Respiratory hazards when breathing laser-generated airborne contaminants (LGAC)	2	4	8	(i) Use laser protective eyewear that provides adequate protection against the specific laser wavelengths being used. All laser eyewear must be marked with optical Density (OD) and laser wavelength. (ii) Maintenance on lasers and laser systems are performed only by facility-authorized technicians trained in laser service. (iii) Provide local exhaust ventilation with a smoke evacuator or a suction system with an in-line filter to reduce laser-generated airborne contaminants levels in laser applications. (iv) Using an appropriate filter or barrier which reduces any transmitted laser radiation to levels below the applicable maximum permissible exposure level, for all facility windows or entryways located within the Nominal Hazard Zone (NHZ) of a Class 4 Laser System. (v) Ensuring that alignment and calibration techniques are used for routine Preoperative checkout of the laser system. (vi) Using skin protection if repeated exposures are anticipated at exposure levels at or near the applicable MPE Limits for the skin. (vi) Ensuring credentialing of staff using laser systems.

02.	While performing surgery	Blood borne Pathogens(BB Ps)	Risk of infection from blood borne pathogens such as Hepatitis B Virus(HBV), Hepatitis C Virus(HCV) and Human Immunodeficiency Virus (HIV)	3	4	12	Sharps injuries in the surgical area must be eliminated or minimized through use of measures such as: • Safer Needle / Other sharps devices. • Blunt-tip suture needles. • Needleless IV connectors. • Proper containers for sharps. • “No Pass Zone” for surgical instruments. • Method for passing equipment safely between surgeon and assistants. • The hands-free technique is a work practice where by a tray or other means are used to eliminate simultaneous handling of sharp instruments during surgery. • Appropriate personal protective equipment using if blood or OPIM exposure is anticipated. • Contaminated needles and other contaminated sharps are discarded immediately or as soon as feasible into appropriate containers. Sharps containers are located as close as is feasible to the immediate where sharps are used or reasonable anticipated to be found. • Contaminated needles and other contaminated sharps are not allowed to bent, recapped, or remove. Shearing or breaking contaminated needles is prohibited. • Hand washing facility provided with appropriate soap, water, whenever there has been
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							occupational exposure to blood or OPIM. • Provision of appropriate antiseptic hand cleanser.
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03.	The anesthetic gas and vapors that leak out into the surrounding room during medical and surgical procedures are considered waste anesthetic gases.	Isoflurane & Sevoflurane Exposure to waste anesthetic gases occurs from: Poor work practices during the anesthetization of patients. Leaking or Poor gas line connections. Improper or inadequate maintenance	Potential adverse health effects of exposure to waste anesthetic gases include loss of consciousness, nausea, dizziness, headaches, fatigue, irritability, drowsiness, problems with coordination and judgment, as well as sterility, miscarriages, birth defects, cancer, and liver and kidney disease.	3	4	12	(i) Using appropriate anesthetic gas scavenging systems in operating rooms. (ii) Providing enough ventilation in the surgical suite to keep the room concentration of waste anesthetic gases below the applicable occupational exposure level. (iii) Using a properly designed and operating dilution ventilation system to minimize waste anesthetic gas concentrations in recovery room areas. (iv) Implement a routine ventilation system maintenance program to keep waste anesthetic gas exposure levels to a minimum.
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		of the machine. Patient exhalation in the recovery room or Post Anesthesia Care Unit (PACU) during off – gassing of surgery patients.					Vaporizers of anesthesia machines turning off when not in use. Proper face masks, sufficiently inflated endotracheal tubes, and the prevention of anesthetic spills will decrease the amount of waste anesthetic in the operating room. (vi) Inspection and maintenance of anesthesia machines. (vii) Prior to each day's use, a complete checking of all anesthesia equipments (connectors, tubing etc.) (viii) Providing information and training.
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04.	Patient Transfer	Manual handling	Risk of Patient Fall, back pain / hernia to handler	3	3	9	(i) Training on operation of the hydraulic stretcher (ii) Training on ergonomics and manual handling. (iii) Regular training & education to patient handlers.
05.	While taking x-ray	Radiation	Chances of getting radiation effect on Thyroid.	2	3	6	(i) One protector available. (ii) Passive dosimeter for personal exposure monitoring radioactive materials. (iii) Lead aprons provided for employees and patients and should be worn in the direct x-ray field. (iv) Adopted safe system of work.
06.	OT Store room	Fall of objects from height	Getting injury by fall of objects on head.	3	3	9	(i) Store room and racks are provided. (ii) Regular inspection of storage areas. (iii) Regular maintenance checks on the condition of the shelving or storage facilities.

07.	Passageway from OT to Post OT Room.	Uneven surfacemat	Fall may happen.	2	2	4	(i) Guardrails are provided. (ii) Good mat on the floor with good grip to avoid the slip / trip.
08.	Illumination.	No Natural light in the department.	Eye Stress/Fatigue/Eye sight.	2	3	6	(i) Using daylight bulbs or fluorescent tubes for color recognition tasks. (ii) Sufficient lights and well distributed in the area. (iii) Lighting color suitable for the activity. (iv) Lux level test conducted by third party and maintaining correctively.
09.	Workplace surroundings.	Fire	Can cause fire. If trapped, staff could suffer fatal injuries from smoke inhalation or burns.	3	5	15	(i) Keeping sources of ignition and flammable substances apart (ii) Ensuring good housekeeping at all times. (iii) Installed smoke alarms and fire alarms or bells. (iv) Appropriate training on procedures are there, including fire drills. (v) Keeping adequate no. of fire exits and escapes routes clearly marked and unobstructed at all times. (vi) Availability of correct fire-fighting equipment for putting a fire out quickly. (vii) Assuring that all devices and equipment constructed and installed to comply with the standard are approved for the purpose for which they are intended. (viii) Assuring that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition. (ix) Training on Fire Safety by conducting Fire and evacuation mock drills.

10.	Using Needle Sticks	Needle stick injuries	Physical or biological injury /infection due to needle sticks or contract with sharps	3	4	12	(i) Proper and ongoing training in needle stick prevention. (ii) Proper reporting and treatment facilities. (iii) Immunization with Hepatitis B Vaccination. (iv) Protocol on safe use of sharps. (v) Immediately and safe disposal of sharps into appropriate, Puncture-proof sharps bins. (vi) Not overfilling sharps containers. (vii) Never re-sheathing needles.
	Encounter with Infected Patients	Healthcare Associated Infection	Exposure to healthcare infectious disease and agents leading to personnel being infected.	4	4	16	(i) Improved hand and personnel hygiene. (ii) Use of PPE. (iii) Safe use of disposal and sharps. (iv) Proper training in the prevention of exposure. (v) Proper and safe disposal of PPE. (vi) Proper and effective ventilation. (vii) Alerting and Providing information about latest communicable diseases as per WHO information.

RISK ASSESSMENT – ELECTRICAL ROOM

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
01.	Working in electrical rooms	Doing maintenance and rectifying electric circuits	Electrocution and Burns	3	4	12	(i) Training provided on all circuits. (ii) Using Lock Out Tag Out Procedure. (iii) Using RCB. (iv) Using ELCB. (v) Proper electrical PPE's are to be provided to wear while working on electrical circuits.

02.	Loose wires	(i) Loose Wires are hanging in the room. (ii) Overloading the MDB's and Sub DB's.	Short circuit, fire may happen, effecting the medical equipment or interrupting the life saving equipment.	3	2	4	(i) Proper securing of wires in the walls. (ii) Daily visual inspection of electrical rooms to check the joints, overloads, cable damage.
03.	Doing maintenance	Electrical Hazard	Electrical shock burns	2	3	6	(i) Conducting electrical Safety training to all maintenance staff. (ii) Electrical hazards signage's placed at various places. (iii) Using lock out Tag out System. (iv) Using Electrical PPE's.
04.	Workplace surroundings.	Fire	Can cause fire. If trapped, staff could suffer fatal injuries from smoke inhalation or burns.	3	5	15	(i) Keeping sources of ignition and flammable substances apart (ii) Ensuring good housekeeping at all times. (iii) Installed smoke alarms and fire alarms or bells. (iv) Appropriate training on procedures are there, including fire drills. (v) Keeping adequate no. of fire exits and escapes routes clearly marked and unobstructed at all times. (vi) Availability of correct fire- fighting equipment for putting a fire out quickly. (vii) Assuring that all devices and equipment constructed and installed to comply with the standard are approved for the purpose for which they are intended. (viii) Assuring that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition. (ix) Training on Fire Safety by conducting Fire and evacuation mock drills.

RISK ASSESSMENT – RADIOLOGY DEPARTMENT

S.No.	Location / Activity	Hazard	Risk	Risk Rating			Control Measures
				P	S	R	
1.	All rooms of radiology Department	Contaminated air was reaching the workers	Eye, Throat Nose Irritation, Headaches and Tiredness.	2	3	6	(i) Mechanical or forced ventilation is provided by air movers or fans in the wall, roof or Air-conditioning system of a building. It promotes the supply or exhaust air flow in a controllable manner. (ii) All faults are reported immediately for the maintenance. (iii) Regular inspection of the air provision system by in house team. (iv) Proper Housekeeping. (v) Proper PPM'S of the air circulation system. (vi) Using HEPA filters
2.	Radiology, ICU, OT	Radiation	Exposure to levels of radiation detrimental to the Health of the Staff member.	3	3	9	(i) Passive dosimeter for personal exposure monitoring radioactive materials. (ii) Lead plated glass is also used as a barrier to protect against radiation exposure. (iii) Lead aprons provided for employees and patients and should be worn in the direct x-ray field. (iv) Each radiation area marked with a sign or signs bearing the radiation caution symbol. (v) Preventive and corrective maintenance programs for x-ray machines. (vi) Health surveillance for employee working with x-ray machines.

3.	While taking x-ray	Exposure of radiology staff to possible work-related musculoskeletal disorders (MSDs) from constant lifting and reaching for patients during x-ray procedures and/or transfers	Chances of getting strain and sprain injuries to back and shoulder areas	2	2	4	(i) Training to employees in proper lifting techniques. (ii) Avoiding awkward postures, such as twisting while lifting. (iii) Avoiding lifting/reaching or working above shoulder height. (iv) Providing sufficient staff for the lifting jobs. (v) Instructing the patient in ways to help facilitate the lift and procedure.
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4.	Patient Transfer	Manual handling	Risk of Patient Fall, back pain / hernia to handler	2	2	4	(i) Training on operation of the hydraulic stretcher (ii) Training on ergonomics and manual handling. (iii) Regular training & education to patient handlers.
5.	Work overload	Stress	Work related stress may lead to physical or mental illness.	2	2	4	(i) Staff undergone stress management training. (ii) Staff can talk to supervisors or manager if they are feeling unwell or un-easy about things at work. (iii) Effective and confidential communication system. (iv) Regular job related refresher training provided. (v) Achievable work targets. (vi) Resources providing with increase of work. (vii) Effective leave Management. (viii) Strategies requirement to encourage staff to participate in decision making.

6.	Fast action / Movements in the Corridors	Slips & Trips	Slips and trips that may lead to injury	2	3	6	(i) General good housekeeping. (ii) All areas well lit. (iii) No trailing leads or cables. (iv) Prompt cleaning every time. (v) Staff clean as they go, spills and breakages cleared promptly and the floor cleaned to dry. (vi) Regular checks and repairs of any crack and chipped floor tiles. (vii) Staffs keep work areas clear, eg no boxes left in walkways, deliveries stored immediately.
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Result – Total of 81 risks were identified from 14 clinical and non-clinical departments of the hospital. Maximum number of risks related to patient/employee safety. Based on the Impact and Probability Scale, Risk Priority number was obtained, 81 risk identified, Out of which 11 were extreme risk, 23 were high risks, 47 were moderate risk.

CHAPTER 5 - RECOMMENDATIONS

- Monthly risk assessment should be done by the respective department HODs and quarterly evaluation should be done by the facility department.
- Periodically Risk Assessment training needs to be provide to all clinical staff and admin staff as per their scope of services.
- Risk register should be maintained appropriately by the departmental heads for their departments.
- Pre-inspection should be done before the Abu Dhabi OSHMS Audit and all the requirements should be met before the audit.
- Adequate process should be there regarding communicating risk and proper documentation of the same.
- Any changes in the facility department policies, risk procedures should be well communicated with the other departments.
- Provision of trainings like
 - OSH Induction for all new joiners
 - Global Harmonized System for the Management of Hazardous Material
 - Fire Safety Awareness
 - Covid – 19 Risk Management
 - Competency Based Trainings
- Implementation of number of comprehensive corporate social responsibility programmes.
 - Emergency Drills with External Stakeholders
 - Ergonomic Safety Awareness
 - Heat Stress Management
 - Healthy Nutrition Diet Awareness
 - Covid-19 Awareness programmes.

CONCLUSION

The risk register is great for documenting information in a continuous stream, during the whole project cycle, and it may be used as a tool for Quality improvement and Patient Safety, it can be inferred from the report. It is also helpful to expand on the likelihood and effect elements of recurrent hazards at the project's conclusion. When used sensibly, it is effective at managing and visualising risks because a badly documented risk could lead coworkers astray. The risk assessment underpins actions made in light of conceivable undesirable occurrences. Despite the tremendous efforts of healthcare organisations and professionals, there is still room for improvement in hospitals' present risk assessment procedures for quality control.

LIMITATIONS

Financial resources required to implement the additional controls could not be determined. Due to paucity of time the residual risk i.e, the risk left after the implementation of additional strategies/ controls could not be calculated. Hence, the efficiency and effectiveness of the control measures could not be measured.

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