

# **PART 1: INTERNSHIP REPORT**

## **1. ORGANIZATION PROFILE**

**Quality Council of India (QCI)** was set up in 1997 jointly by the Government of India and the Indian Industry represented by the three premier industry associations i.e. Associated Chambers of Commerce and Industry of India (ASSOCHAM), Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI), to establish and operate national accreditation structure and promote quality through National Quality Campaign. The Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, is the nodal ministry for QCI. QCI is also assigned with the task of monitoring and administering the National Quality Campaign and to oversee effective functioning of the National Information and Enquiry Services.

To realise the objective of improving quality competitiveness of Indian products and services, QCI provides strategic direction to the quality movement in the country by establishing recognition of India conformity assessment system at the international level.

### **Vision**

:

To be among the world's leading national apex quality facilitation, accreditation and surveillance organisations, to continuously improve the climate, systems, processes and skills for total quality.

### **Mission:**

To help India achieve and sustain total quality and reliability, in all areas of life, work, environment, products and services, at individual, organisational, community and societal levels.

### **Objectives**

- Establish and maintain an accreditation structure in the country
- Provide right and unbiased information on quality related standards
- Spread quality movement in the country through National Quality Campaign
- Facilitate upgradation of equipments and techniques related to quality
- Represent India's Interest in International forums

- Help establish brand equity of Indian products and services

QCI is governed by a council of 38 members with equal representation of government, industry and consumer. Chairman of QCI is appointed by the Prime Minister's office on recommendation of the government and industry. Council is the apex level body responsible for formulating the strategy, general policy, constitution and monitoring of various components of QCI including the accreditation boards with objective to ensure transparent and credible accreditation system. The Council through a Governing Body monitors the progress of activities and appeal mechanisms set by the respective boards.

QCI functions through the executive bodies (boards / committees) that implement the strategy, policy and operational guidelines set by the Quality Council of India with a view to achieve international acceptance and recognition of various components including the accreditation systems.

Each Board has a Chairman nominated by the QCI Chairman. The Boards comprise of representative volunteer group of stakeholders who guide and pursue the activities and progress of the respective Boards.

QCI has established and operates accreditation structure in the area of conformity assessment covering bodies offering services like certification, inspection, testing, calibration and registration. The disciplines presently include management of quality, environment, food safety, health, occupational health and safety.

## DIFFERENT ACCREDITATION BOARDS IN QUALITY COUNCIL OF INDIA



**Fig. 1: Constituent Boards of QCI**

### **2. NATIONAL ACCREDITATION BOARD FOR HOSPITALS AND HEALTHCARE PROVIDERS (NABH)**

NABH is a constituent board of Quality Council of India, set up to establish and operate accreditation programme for healthcare organizations. The board is structured to cater to much desired needs of the consumers and to set benchmarks for progress of health industry. The board while being supported by all stakeholders including industry, consumers, government, has full functional autonomy in its operation.

#### **Achievements & International Linkages**

NABH is an institutional member of the International Society for Quality in Health Care (ISQua). ISQua is an international body which grants approval to Accreditation Bodies in the area of healthcare as mark of equivalence of accreditation program of member countries. International Society for Quality in Healthcare (ISQua) has accredited “Standards for Hospitals” developed by National Accreditation Board for Hospitals & Healthcare Providers

(NABH, India). The approval of ISQua authenticates that NABH standards are in consonance with the global benchmarks set by ISQua. The hospitals accredited by NABH will have international recognition. This will provide boost to medical tourism.

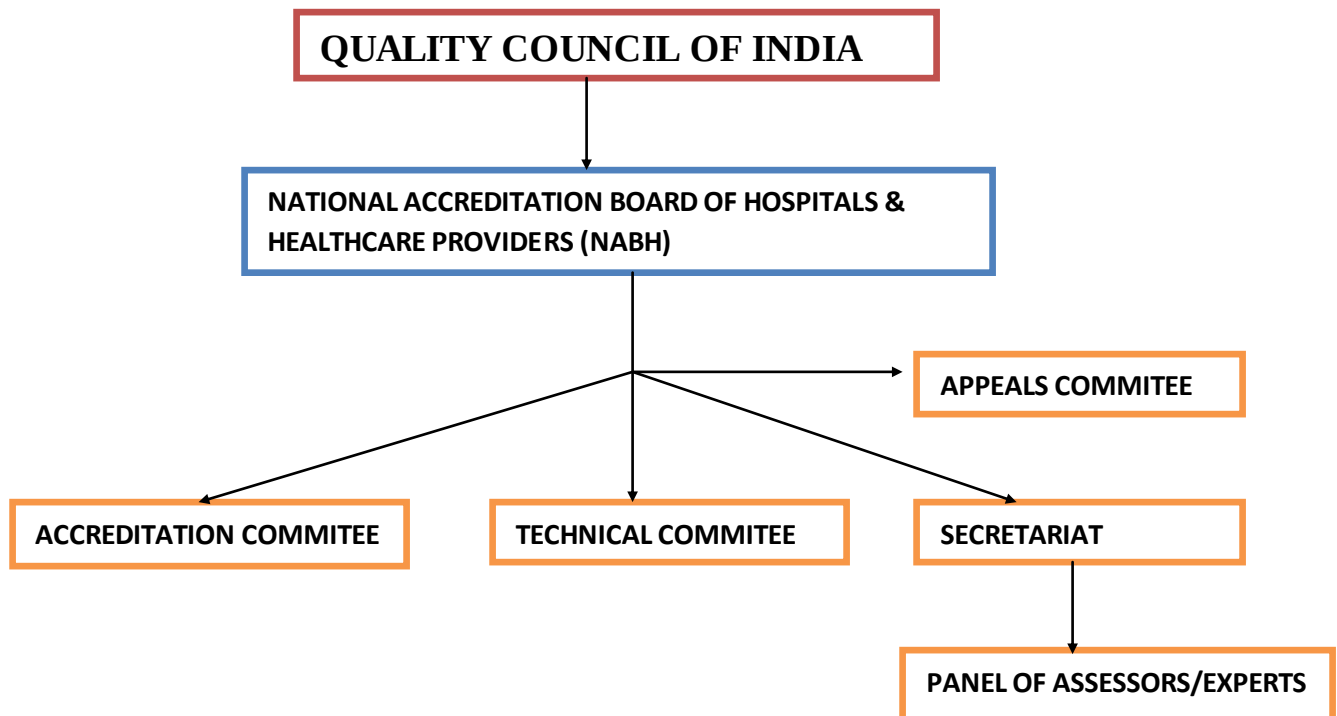
International Society for Quality in Health Care (ISQua) is an international body which grants approval to Accreditation Bodies in the area of healthcare as mark of equivalence of accreditation program of member countries.

So far hospital standards of only 11 countries viz. Australia , Canada , Egypt , Hong Kong , Ireland , Japan , Jordan , Kyrgyz Republic , South Africa , Taiwan , United Kingdom were accredited by ISQua. India becomes the 12th country to join in this group.

NABH is the founder member of Asian Society for Quality in Healthcare (ASQua) registered in Malaysia.

### **Organizational Structure:**

**Fig. 2: Organizational Structure of NABH**



### **Accreditation Committee**

The main functions of Accreditation Committee are as follows:

- Recommending to board about grant of accreditation or otherwise based on evaluation of assessment reports & other relevant information.
- Approval of the major changes in the Scope of Accreditation including enhancement and reduction, in respect of accredited hospitals.
- Recommending to the board on launching of new initiatives

### **Technical Committee**

The main functions of Technical Committee are as follows:

- Drafting of accreditation standards and guidance documents
- Periodic review of standards

### **Appeals Committee**

The Appeal Committee addresses appeals made by the hospitals against any adverse decision regarding accreditation taken by the NABH. The adverse decisions may relate to the following:

- refusal to accept an application,
- refusal to proceed with an assessment,
- corrective action requests,
- changes in accreditation scope,
- decisions to deny, suspend or withdraw accreditation, and
- any other action that impedes the attainment of accreditation.

### **NABH Secretariat**

The Secretariat coordinates the entire activities related to NABH Accreditation to hospitals and healthcare organizations.

### **Panel of Assessors and Experts**

NABH has a panel of trained and qualified assessors for assessment of hospitals.

### ❖ **Principal Assessor**

The Principal Assessor is overall responsible for conducting the pre assessments and final assessments of the hospitals.

### ❖ **Assessors**

NABH has empanelled experts for assessment of hospitals. They are trained by NABH on hospital accreditation and various assessment techniques. The assessors are responsible for evaluating the hospital's compliance with NABH Standards.

### **NABH Standards :**

NABH Standards for hospitals prepared by technical committee contains complete set of standards for evaluation of hospitals for grant of accreditation.

The standards provide framework for quality of care for patients and quality improvement for hospitals. The standards help to build a quality culture at all level and across all the function of hospital. NABH Standards has ten chapters incorporating 100 standards and 514 objective elements.

Outline of NABH Standards

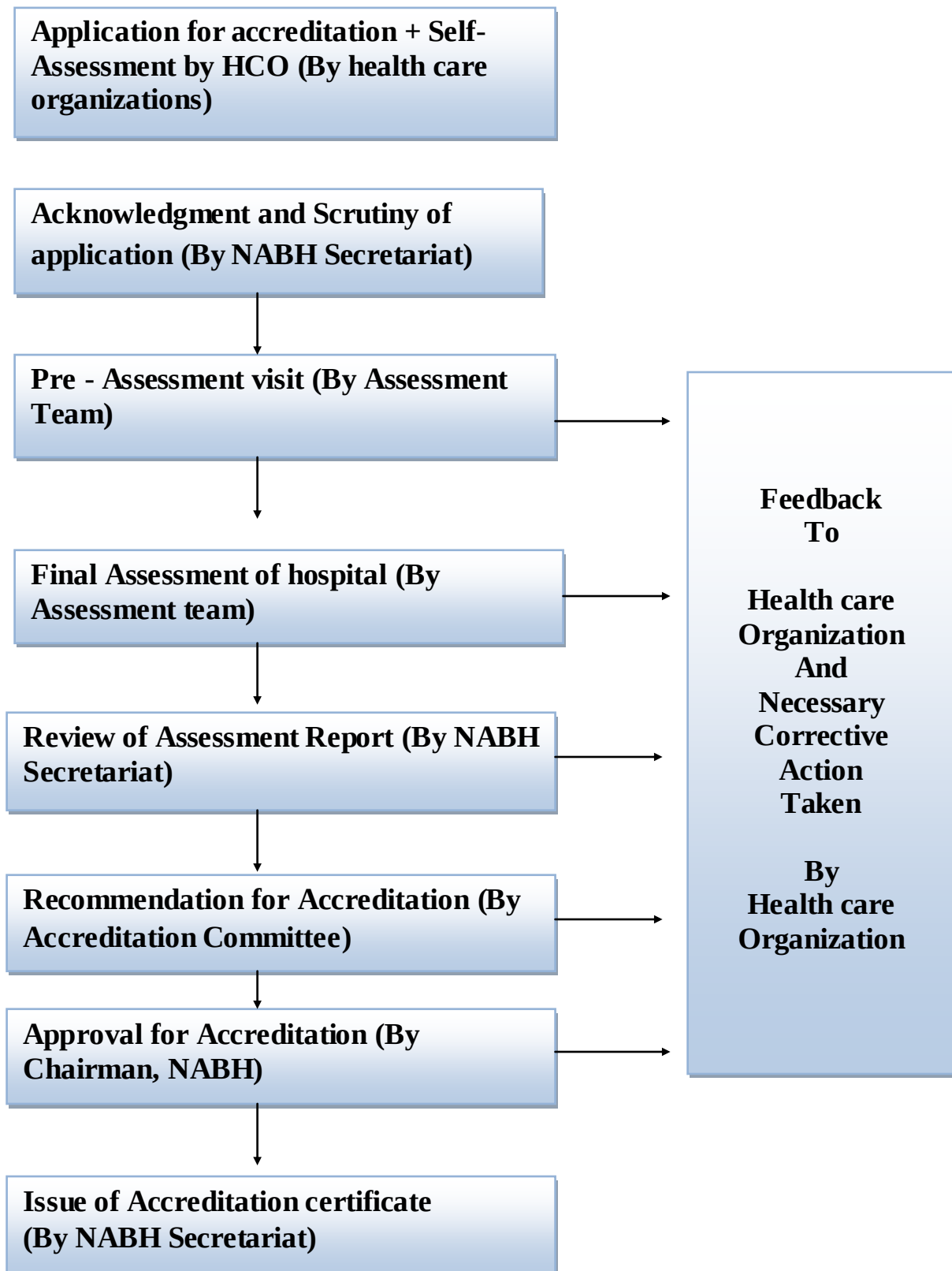
### **Patient Centered Standards**

- Access, Assessment and Continuity of Care (AAC)
- Care of Patient (COP)
- Management of Medication (MOM)
- Patient Right and Education (PRE)
- Hospital Infection Control (HIC)

### **Organisation Centered Standards**

- Continuous Quality Improvement (CQI)
- Responsibility of Management (ROM)
- Facility Management and Safety (FMS)
- Human Resource Management (HRM)
- Information Management System(IMS)

**Fig.3. NABH ACCREDITATION PROCEDURE:**



### **3. TASKS UNDERTAKEN AT NABH BY THE TRAINEE:**

- ❖ Updating of NABH Assessors details
- ❖ Documentation of the Feedback received from hospitals and Principal Assessors
- ❖ Participation in the workshop on Implementation of NABH Standards
- ❖ Assisting in the NABH software development project “ Dream Digitalization” (See **Appendix 1**)
- ❖ Suggestions for the requirements of NABH Quality Dashboard (See **Appendix 2**)
- ❖ Risk management of the work place
- ❖ Participation in “Clean Hospital Campaign- Sparkle” and implementation of 5S in hospitals
- ❖ Documentation of the Programs of Implementation conducted by NABH till date
- ❖ Preparing an Events calendar of the important days for NABH
- ❖ Assisting in providing evidence for standards of the Self assessment organization toolkit of ISQua

### **4. LEARNINGS:**

- ❖ Understanding the NABH Accreditation process
- ❖ Preparation of Terms of Reference documents
- ❖ Implementation of the NABH Standards in hospitals
- ❖ Procedure for handling of complaints
- ❖ Conducting risk assessment for an organization

## **PART 2: DISSERTATION REPORT**

## 1. INTRODUCTION

The workplace safety and health is a decisive factor in organizational effectiveness. Improving occupational health and safety is in the best interests of the government, employers and workers.

Accidents are the most immediately obvious causes of work-related ill-health. Other factors such as layout of equipment and work areas may be contributory factors to ill-health that develop over a longer time. Such things may lead to aches, pains, perhaps breathing, hearing or visual problems, and other discomforts. Other issues, including the effects of passive smoking and risks to mental health, also come to mind.

The ILO estimates that two million women and men die each year as a result of occupational accidents and work-related illnesses. (1) WHO estimates that 160 million new cases of work related illnesses occur every year, and stipulates that workplace conditions account for over a third of back pain, 16% of hearing loss, nearly 10% of lung cancer; and that 8% of the burden of depression can be attributed to workplace risk. (2)

There is widespread agreement among global agencies, including the World Health Organization (WHO) and the International Labour Organization (ILO) that the health, safety and well-being of workers, who make up nearly half the global population, is of paramount importance. It is important not only to individual workers and their families, but also to the productivity, competitiveness and sustainability of enterprises/ organizations, and thus to the national economy of countries and ultimately to the global economy. (3)

A risk assessment of the work place is an important step in protecting the employees, as well as complying with the law. It helps to focus on the risks that really matter in the workplace – the ones with the potential to cause real harm. A proper risk management will result in a safer work place for the employees.

Presently NABH is preparing for ISQua's external organization accreditation for which it is using ISQua's External Organization Survey Tool, which enables organisations to assess their systems, processes and outcomes against the ISQua organisation standards, identify

strengths and weaknesses in performance, develop action plans for improvement, and assess their readiness for an ISQua organisation survey.

Standard 4.9 of the Organization Survey tool of ISQua emphasizes the importance of Staff health and Safety and states that the “Staff health and safety are protected and promoted in accordance with the regulations of the country/state”.

This project work is based on the Health and Safety practices NABH follows and/or plans to introduce in its work place to meet the Staff Health and Safety criterion/ standard of the ISQua Survey tool.

### **1.1 Scope:**

The project covers the health and safety risk assessment of the NABH workplace to identify the possible risks to the staff health and safety. Measures to control the risks have been suggested. The Health and Safety policy and Environment policy documents for NABH are also drafted. Ergonomics safety guidelines including Display Screen Equipment (DSE) usage, for people working in a sedentary workplace have also been suggested to improve the awareness of NABH employees regarding safety while using computers.

The general health and safety issues discussed are similar to those faced by most of the smaller sedentary work places in the country.

The risk assessment process to identify the hazards and risks in the workplace may be carried out in a similar manner for organizations with a similar size and environment as that of NABH. However the risks identified may be different depending on the individual work place.

Recommendations and guidelines are based on the specific staff health and safety related issues identified at NABH, thus are customized as per NABH requirements, and may cover only those aspects of staff health and safety which are required at the NABH work place.

### **1.2 Research Problem:**

The project discusses and puts forth possible solutions to the following questions:

- ❖ Do the buildings and facilities provide a comfortable, functional, secure and safe work environment?
- ❖ What are the possible hazards and the risks associated to them that might occur at the workplace?
- ❖ Are there mechanisms in place to deal with those risks?
- ❖ Is there an active policy on employee health and safety?
- ❖ Is there an active policy for minimizing adverse impacts on the environment?
- ❖ Are safety practices planned and communicated to the employees regularly?
- ❖ Is the staff trained/knowledgeable on health and safety practices?

### **1.3 Review of Literature:**

ISQua emphasizes the importance of the staff health and safety such that it has defined it in one of the standard/criteria used in its Organization survey tool stating that: “Staff health and safety are protected and promoted in accordance with the regulations of the country/state” (4), and gives guidance on how an organization may give evidence of its compliance on the said standard. ISQua states that the evidence for this standard could include:

- a) staff having access to first aid and rehabilitation after injury or illness;
- b) buildings and facilities that provide a comfortable, functional, secure and safe work environment;
- c) equipment and supplies that are sufficient and appropriate for the tasks undertaken;
- d) responses to internal emergencies being planned, communicated to all staff and practiced;
- e) an active policy for minimising adverse impacts on the environment.

NABH is preparing for its accreditation by ISQua, and staff health and safety as a standard needs to be complied with.

The increasing use of interactive systems, keyboard devices and VDUs impact both muscular and visual fatigue. Probably the best summary on these issues is still to be found in Cakir, Hart and Stewart (1980) (5), there is also good coverage of the postural issues in

Corlett, Wilson and Manenica (1986) **(6)** and of a range of issues from ambient environment to posture in Grandjean (1984) **(7)**.

The importance of the work environment to the understanding of the causes of musculoskeletal disorders is now widely recognised. It applies as much to the office as to any other workplace (Haartz and Sweeney, 1995) **(8)**.

In an article on workplace injuries and illness, the International Labour Organisation (1997) **(9)** observes that no global figures exist for musculoskeletal ailments but suggests that millions of workers around the world suffer from one or more of these each year.

Earlier it was reported that in a survey by Sharma (1997) **(10)** there was some evidence that end-users with some knowledge of health and safety seem to suffer fewer problems than those without such knowledge. A subsequent experiment to try and assess the effects of raising awareness amongst users of VDUs is outlined in Gough and Sharma (1998) **(11)**. In designing the experiment account was taken of the suggestions made by the respondents to the survey reported above. The two most popular suggestions were: (i) to use an introductory lecture; and (ii) to distribute more information in a variety of formats. The participants in the experiment were split into four groups. For Group 1, physical changes were made to provide 'an ergonomically correct' working environment. For Group 2, information was provided in the offices in a variety of formats, primarily as posters and leaflets. Group 3 was given a lecture on the topic of health and safety in computerised offices. Group 4 was the control group. After three months a further survey was undertaken to assess changes in behaviour and the incidence of health and safety problems. The results for Group 2 showed the greatest reductions in problems experienced.

Although further work is clearly needed to verify the generality of the results, the immediate outcome suggests that information which is eye-catching, easily assimilated and readily accessible in the work-place is very effective at raising awareness and has an early impact on the incidence of health and safety problems experienced by VDU users. In this experiment the 'educated' end-users made improvements to their own working practices "because they had a better understanding than their colleagues of the problems and the remedies for them" (Gough and Sharma, 1998). (See, Sharma, 1998 **(12)** for more detailed analysis and discussion of this experiment).

#### **1.4 Objectives:**

##### **❖ General Objective:**

To provide evidence and progress of achievements at NABH, on the Staff Health and Safety standard/criterion for ISQua's Organization survey tool.

##### **❖ Specific Objectives:**

1. To identify possible hazards and risks to health and safety in the workplace, their causes and solutions.
2. To design a policy manual/document on Staff Health and Safety/Occupational safety.
3. To design a policy/document on Environment safety and use of Energy saving techniques.

## **2. DATA AND METHODS**

### **2.1 Study Design:**

Action research based on a Qualitative study design was adopted to assess the risks to health and safety of staff. Recommendations and policies were proposed for further action.

### **2.2 Study Area:**

The office of Quality Council of India (QCI) is located at Bahadur Shah Zafar marg, New Delhi. National Accreditation Board for Hospitals and Healthcare Providers (NABH) is a constituent board of QCI with its headquarters situated in the QCI office.

### **2.3 Study Population:**

The QCI employees consisted of the population to be studied.

### **2.4 Sample size:**

The sample size consisted of 25 staff members of the QCI, out of which 6 members are employed with NABH.

### **2.5 Study Variables:**

- ❖ Issues, challenges, practices related to staff health and safety in the organizational workplace.
- ❖ Hazards to employee safety in the workplace
- ❖ Incident reporting, safety policy, risk management

### **2.6 Methods:**

The methods used for data collection were:

- ❖ Key informant Interviews with the staff
- ❖ Participant observation
- ❖ Focus Group Discussions

- ❖ Secondary data source

## 2.7 Methodology:

(For Definitions Hazard, Risk, Risk assessment etc. see **Appendix 3**)

A list of all the hazards observed at the workplace was made. Additions were made to this list subsequently from the primary and secondary data sources as applicable to the NABH workplace.

Primary data sources:

Participant Observation: The trainee directly observed the issues, challenges, practices etc. related to staff health and safety in the organizational workplace. The observations were noted down. The possible hazards to employee safety in the workplace were identified. A Hazard Identification Checklist was formed listing all reasonably foreseeable hazards that might occur in the workplace.

Key informant interviews with the staff: Six employees of QCI were interviewed. A semi structured format was used. Predefined, but open-ended questions were prepared. In the course of the interview, adjustments were accordingly made to the sequence of the questions to be asked or any additional questions to be put based on the context of the conversations. The questions asked were related to any identified hazards, incident reporting, safety policy, risk management.

- What are the possible hazards for your work place?
- How can a risk assessment be carried out at your work place?
- How do you report accidents or incidents occurring in the organization?
- In what areas of health and safety can training be provided to staff?
- What can be included in the Health and Safety policy?
- What would you suggest for improving the safety of the staff?
- What kind of record keeping may be done related to health and safety?
- How can responsibilities related to safety issues be delegated?

Focus Group Discussion: Two sessions of Focus group discussions were conducted. For each session, a focus group comprising of 6 QCI members, and a moderator, was formed with the trainee acting as an observer of the discussion. Risk assessment of the workplace, major issues in health and safety of employees, planning of a Health and Safety Policy document, challenges in implementation, recommendations and suggestions from the group members were discussed.

Questionnaire: A majority of the employees at NABH habitually use display screen equipment (DSE) as a significant part of their normal work. DSE includes any graphic or alphanumeric display like computers.

Since most of their time is spent at their work stations, the staff faces health risks associated with DSE usage.

A Risk Assessment Questionnaire was prepared for DSE users, to identify the potential risks from DSE usage, and decide on the actions that may be taken to prevent harm to the health of the staff. (See **Appendix 4**)

Secondary data source:

Review of the guidelines given by Occupational Safety and Health Administration (OSHA) **(13, 14)**; Delhi Building byelaw related to Fire **(15)**; Delhi Prohibition of Smoking and Non-Smoker's Health Protection Act, 1996 **(16)**.

Based on the aforementioned Qualitative methods, a Quantitative Risk Assessment of the workplace was done. Any new hazards that the trainee discovered during the interviews, FGDs were also added to the list of hazards made during direct observation. The possible risks arising from all the identified hazards were listed.

The Risk rating was done for each identified hazard and the Risk control measures, implementation, and reviewing of the actions was suggested.

The Hazard Identification checklist may be used by NABH in its subsequent checks to assist in hazard identification, and more points may be added or changes made to it accordingly as and when required. (See **Appendix 5** for Hazard Identification Checklist)

The major areas covered in the checklist were:

- ❖ Fire prevention and Emergency preparedness
- ❖ Electrical Hazards
- ❖ General Lighting
- ❖ Walkways/ Floors/Stairways/Corridors/Walls/Ceilings/Elevator
- ❖ Facilities and Housekeeping
- ❖ Storage
- ❖ First Aid
- ❖ Office
- ❖ Ergonomic Observations
- ❖ Display Material
- ❖ Occupational Health and Safety (OHS) Information
- ❖ Employee Training

#### **The Risk Assessment:**

Workplace hazard identification, and risk assessment and treatment are on-going. A risk assessment should be conducted:

- ❖ If it has not been done before
- ❖ When a hazard has been identified
- ❖ When a change to the workplace occurs
- ❖ After an incident or workplace injury
- ❖ At regularly scheduled times appropriate to the risk profile of the workplace

#### **Risk assessment Steps:**

1. Identifying workplace hazards: All reasonably foreseeable hazards arising from work were identified.

The following sources of information were used:-

- ❖ Visual inspection of the workplace in a direct way
- ❖ Consultation with employees, interviews, FGDs
- ❖ OSHA guidelines

2. Assessing the risk: All possible risks related to the hazards were identified.
3. The consequences and likelihood of the risks were then measured based on a 5 point scale.

| Likelihood                 | Value | Severity           |
|----------------------------|-------|--------------------|
| Highly Unlikely/Rare       | 1     | Insignificant      |
| Unlikely                   | 2     | Minor              |
| Possible                   | 3     | Moderate           |
| Likely                     | 4     | Major              |
| Very Likely/Almost Certain | 5     | Catastrophic/Fatal |

**Table 1: Likelihood and Consequence Values**

(See **Appendix 6** for definitions of the above terms)

The highest score was 5 for both Likelihood and Consequence.

.

When determining the potential consequences of identified hazards, the following were considered: **(17)**

- ❖ The nature of the hazard posing the risk
- ❖ Any combinations of hazards such as heat and manual handling tasks
- ❖ The types of injuries or illnesses foreseeable from exposure
- ❖ The duration and level of exposure to the hazard
- ❖ The existing control measures in place

Once the consequences of a hazard were determined, the likelihood of that hazard was assessed. Factors taken into consideration: **(17)**

- ❖ How often the hazard has the potential to harm
- ❖ The number of people exposed to the hazard
- ❖ The duration of exposure
- ❖ The quantities of materials or multiple exposure points involved
- ❖ The position of the hazard relative to employees and to other hazards
- ❖ The skills and experience level of persons exposed

- ❖ Other elements of the work environment such as distractions
- ❖ Environmental conditions – there may be conditions which increase the likelihood of an incident occurring such as water in the vicinity of an electrical hazard
- ❖ The introduction of new work processes
- ❖ The effectiveness of existing control measures

The risk scores were calculated using the formula: Risk = Likelihood \* Consequence

A Risk classification matrix (17) was used:

| Consequence |                |               |       |          |       |              |
|-------------|----------------|---------------|-------|----------|-------|--------------|
| Likelihood  |                | Insignificant | Minor | Moderate | Major | Catastrophic |
|             | Rare           | L             | L     | M        | H     | H            |
|             | Unlikely       | L             | L     | M        | H     | E            |
|             | Possible       | L             | M     | H        | E     | E            |
|             | Likely         | M             | H     | H        | E     | E            |
|             | Almost certain | H             | H     | E        | E     | E            |

**Table 2: Risk Matrix**

**Legend:**

**E** extreme risk; immediate action required

**H** high risk; senior management attention required

**M** moderate risk; management responsibility must be specified

**L** low risk; manage by routine procedures

A high risk score means greater priority needs to be given while controlling that risk.

(See **Appendix 7** for definitions of the risk categories)

4. Controlling the risks: Restrictions on space, resources, or physical practicalities, meant that not all identified controls for hazards could be implemented immediately. Thus the most effective control measures were determined for the identified hazards and the implementation process was prioritized according to the risk profile of each hazard. Controls

for hazards assessed as high risk should be put into operation before those assessed as a medium or low risk.

It is important to ensure that any risks to the health and safety of staff and visitors, arising from the workplace or any work related activity, are:

- ❖ Eliminated; or
- ❖ Minimised to as low as reasonably practicable (ALARP) if it is not reasonably practicable to eliminate them.

One also needs to ensure that the control measures selected:

- ❖ Adequately control exposure to the risk
- ❖ Do not create a new hazard
- ❖ Allow staff and visitors to do their work without undue discomfort or distress

The hierarchy of control pyramid was used to determine the most appropriate method for controlling risk. Where reasonably practicable, it must be ensured that any hazards identified are eliminated. Elimination of hazards is the most effective control measure.

| Effectiveness                                                                                                      | Control                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Most</b><br><br><b>Least</b> | <b>Elimination</b><br>Eg. Discontinue use of product, equipment, cease work process                         |
|                                                                                                                    | <b>Substitution</b><br>Eg. Replace with a similar item that does the same job but with a lower hazard level |
|                                                                                                                    | <b>Isolation</b><br>Eg. Put a barrier between the person and the hazard                                     |
|                                                                                                                    | <b>Engineering controls</b><br>Eg. Change the process, equipment or tools so the risk is reduced            |
|                                                                                                                    | <b>Administration controls</b><br>Eg. Guidelines, procedures, rosters, training etc to minimize the risk    |
|                                                                                                                    | <b>Personal protective equipment</b><br>Eg. Equipment worn to provide a temporary barrier                   |

**Table 3: Hierarchy of Controls**

(Appendix 8 describes how the hierarchy of control works)

‘Residual Risk’ is the risk that remains after risk control measures have been implemented. Be aware of the nature and extent of the residual risk. It should be documented and subject to a monitoring and review process.

5. Monitoring and Reviewing: Ensuring that hazards and risks are effectively controlled requires ongoing monitoring and review to check that control measures are implemented, are working effectively and are maintained. Factors that affect a risk assessment and change the level of risk include the financial and human resource input involved in implementing and maintaining control measures.

Outcomes of the risk assessment:

#### Communication

It is important to communicate the results of the risk assessments to staff. The form of communication will vary but at the least should result in the development and implementation of safe work procedures, if they have not already been developed. These will be an outcome of the risk registers in which the results of the risk assessments should be recorded.

The Health and Safety Committee will expect to see that risk assessments have been conducted and that progress is being made against outcomes of the risk assessments.

#### Support

It is important to provide support through:

- ❖ Senior management commitment and communication
- ❖ Clearly assigning actions and responsibilities
- ❖ Providing sufficient resources to achieve risk reduction to ALARP within the organization

### 3. FINDINGS AND DISCUSSION

#### 3.1 Steps of risk management:

- ❖ Identify
- ❖ Assess
- ❖ Control
- ❖ Implement
- ❖ Review

1. Identify: The hazards are identified and categorized

**The hazards identified at the workplace were: (See Appendix 9: Risk Management Worksheet)**

| S.No. | Hazards Identified                                                                         | Hazard Category       |
|-------|--------------------------------------------------------------------------------------------|-----------------------|
|       |                                                                                            | <b>a) Physical</b>    |
| 1     | Broken plugs, sockets, switches or unscrewed/ damaged/frayed/ exposed wires, leads, cables | Electrical            |
| 2     | Temporary leads or cords on the floor                                                      | Electrical            |
| 3     | Area in front of electrical circuit panels is not clear(at least 36 inches open area)      | Electrical            |
| 4     | Electrical equipment is not turned off at the end of the day                               | Electrical            |
| 5     | Noise during work hours is disruptive, excessive or distracting                            | Office environment    |
| 6     | Cigarette smoke                                                                            | <b>b) Chemical</b>    |
|       |                                                                                            | <b>c) Biological</b>  |
| 7     | Air conditioners not cleaned/ No fresh air                                                 | Bacteria              |
| 8     | Dust/Mold on surfaces and papers stored in seating areas                                   | Bacteria/Virus/Fungus |
|       |                                                                                            | <b>d) Ergonomic</b>   |
| 9     | Workers have to maintain the same posture over extended periods of time; Repetitive work   | Ergonomic             |

|    |                                                                                                       |                                                      |
|----|-------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| 10 | Continuously seeing the computer monitor/screen                                                       |                                                      |
| 11 | Glare on computer screen                                                                              | Ergonomic                                            |
| 12 | Wrong seating position (posture, arm hands positions etc.)                                            | Ergonomic                                            |
| 13 | Chair and footrests heights are not properly adjusted                                                 | Ergonomic                                            |
| 14 | Monitors not directly in front of users, level of screens not properly maintained as per eye level    | Ergonomic                                            |
| 15 | Work burden                                                                                           | <b>e) Psychosocial</b>                               |
|    |                                                                                                       | <b>f) Safety</b>                                     |
| 16 | Walkways/floors working spaces are uncluttered, tripping hazards are present                          | Walkways/Floor/Stairways / Corridors/ Walls/Ceilings |
| 17 | Floor around racking is cluttered                                                                     | Storage                                              |
| 18 | Materials are not stored in racks in a safe manner                                                    | Storage                                              |
| 19 | First aid kit is not available                                                                        | First Aid                                            |
| 20 | Emergency phone numbers (police, fire, ambulance, hospital) are not displayed                         | First Aid                                            |
| 21 | Fire alarms and sprinklers are not present                                                            | Fire                                                 |
| 22 | Insufficient fire exits (no separate exit staircase from the floor)                                   | Fire                                                 |
| 23 | No fire drills carried out                                                                            | Fire                                                 |
| 24 | Employees are not trained in the correct use of fire extinguisher                                     | Fire                                                 |
| 25 | No Emergency action plan/Evacuation plan in practice (Disasters: Earthquake, Bomb threat etc.)        | Practices                                            |
| 26 | Absence of Signages (Directing on locations, Emergency Exit, Elevator usage safety, Fire safety etc.) | Practices                                            |
| 27 | No employee training on Health and safety issues (Fire safety and evacuation, Ergonomics etc.)        | Training                                             |
| 28 | Yearly maintenance check of fire extinguishers not done                                               | Practices                                            |

**Table 4: Hazards identified at the work place**

2. Assess: The possible risks arising from the hazards are identified.

The Consequences I and Likelihood (L) of the hazards are rated.

Risk score I is calculated. Example:

| Hazards Identified                                                                       | Hazard Category | Risk identification                         | Risk Calculation |                 |   |
|------------------------------------------------------------------------------------------|-----------------|---------------------------------------------|------------------|-----------------|---|
|                                                                                          |                 |                                             | L                | C               | R |
| Broken plugs, sockets, switches or unscrewed/damaged/frayed/exposed wires, leads, cables | Electrical      | a) Electric shock<br>b) Short circuit, Fire | UL               | Insig. to Major |   |

**Table 5: Hazard Identification and Risk Calculation**

3. Control: What is already being done, what type of control and what actions need to be taken are considered. Example:

| CONTROL                                     |                            |              |                                                                    |               |   |   |
|---------------------------------------------|----------------------------|--------------|--------------------------------------------------------------------|---------------|---|---|
| Risk identification                         | What is already being done | Risk Control |                                                                    | Residual risk |   |   |
|                                             |                            | a) Control   | b) Action                                                          | L             | C | R |
| a) Electric shock<br>b) Short circuit, Fire | Repair/Replace             | Eliminate    | Timely remove and repair the faulty wiring, circuit, switch, cable |               |   |   |

**Table 6: Risk Control**

4. Implement: The person responsible for the execution of the control/action and the time within which the action needs to be done are quoted.

5. Review: This includes the date when the action taken is to be reviewed, whether reviewed or not and the person who reviewed.

Example:

|                                          | IMPLEMENT                     |                  | REVIEW      |                |             |
|------------------------------------------|-------------------------------|------------------|-------------|----------------|-------------|
| Risk                                     | Person responsible for Action | Agreed timeframe | Review date | Reviewed (Y/N) | Reviewed by |
| a) Electric shock b) Short circuit, Fire | Mr. FCS                       | 3 days           | 18 Apr 2011 | Y              |             |

**Table 7: Implementation and Review of Controls**

**Key: UL-Unlikely, HUL-Highly Unlikely**

### 3.2 DSE Risk Assessment: (See Appendix 4 for DSE Risk Assessment Questionnaire)

25 members of Quality Council of India (QCI) filled the DSE Risk Assessment.

The following points of the questionnaire were more notable for the DSE risk identification:

| QUESTION                                                                                           | RESPONSE            |    | COMMENTS                                               |
|----------------------------------------------------------------------------------------------------|---------------------|----|--------------------------------------------------------|
| Average number of hours of computer usage                                                          | 8-9 hours (approx.) |    |                                                        |
| Average hours of continuous use at a time                                                          | 1-2 hours (approx.) |    |                                                        |
|                                                                                                    | YES                 | NO |                                                        |
| Pain, discomfort or stiffness in neck, shoulders, arms or hands during or after using IT equipment |                     |    | 72 % of the respondents answered yes to this question. |
| Have you felt any of the above when                                                                |                     |    | 60% of the respondents                                 |

|                                                                                   |  |  |                                                                                               |
|-----------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------|
| working with IT equipment in the past?                                            |  |  |                                                                                               |
| Do you have comfortable levels of ventilation?                                    |  |  | 40% answered with a No                                                                        |
| Is the workplace at a comfortable temperature?                                    |  |  | 20% of the respondents                                                                        |
| Are there comfortable noise levels in the workplace?                              |  |  | 8%                                                                                            |
| Training on DSE usage, risks, ergonomics                                          |  |  | Only 2 employees have some training: 1 related to IT, and the other holds a OHSMS certificate |
| Do you have any other concerns or comments regarding your workstation or DSE use? |  |  | 20% feel that there is less space for movement in their work station                          |

**Table 8: Findings of DSE Risk Assessment**

**Findings of the DSE Risk Assessment:**

- ❖ Average number of hours of computer usage was 8-10 hours.
- ❖ Many of the employees felt pain, discomfort or stiffness while using DSE.
- ❖ The level of ventilation and temperature were reported to be unsatisfactory by a few employees.
- ❖ None of the employees are trained in safe ergonomics for the workplace
- ❖ A small percentage also feels that the noise levels are not comfortable and there is not enough space for the movement of chair or leg room.

### **3.3 LIMITATIONS OF THE STUDY:**

1. In the study, risk assessment and not a hazard assessment is done. The likelihood of a risk occurring, and a hazard occurring may be different. So score calculation for both will be different. There might be instances where likelihood and consequence of a hazard may be different from those of the risks arising out of it.

Example: For a hazard like No fire alarms which is certain (likelihood), but the risk from it-fire is less likely (since it might not always occur).

2. Problems in implementation of control/action suggestions for the NABH office due to:
  - Space constraints
  - Structural issues- building (like no windows for fresh air ventilation)

## **4.. RECOMMENDATIONS**

Based on the findings of the above mentioned Risk assessments, the following were recommended:

- ❖ Control measures/Actions to be taken for the identified risks
- ❖ Development of a Health and Safety Policy
- ❖ Drafting an Environment Safety Policy
- ❖ Ergonomics guidelines for the staff

### **4.1 The recommended control measures/actions to be taken are:**

- ❖ Electrical hazards: All broken switches/frayed wires/plugs to be replaced or repaired immediately.
- ❖ Fire safety (See Health and Safety policy document)  
Fire safety drill at the workplace has been suggested.
- ❖ Trips and falls: All stray wires lying across the floor, files, documents, papers etc. must be kept away from the walkways to avoid any obstruction, and pose as tripping hazards.
- ❖ Cigarette smoke (See policy on smoking under Health and Safety Policy document).
- ❖ Timely AC maintenance/checks and cleaning of AC vents to prevent growth of microbes in the AC system which might otherwise cause disease.
- ❖ Work place Ergonomics (See Ergonomics guidelines)
- ❖ Storage: Ensure all items stored above shoulder height are stable and suitably restrained.  
Arrange storage so that heavy items are at waist height and lighter items near floor level and lightest above shoulder height.
- ❖ First aid kit (See under Staff Health and Safety Policy document)
- ❖ Emergency phone numbers (nearby hospitals, fire department, ambulance on call, police etc.) must be displayed at all important areas and telephones so that no delays occur due to searching any important numbers during emergencies.
- ❖ Training (See Training section under Health and Safety Policy document)

- ❖ Development of an Evacuation plan for emergencies (See under Health and Safety Policy document).
- ❖ Timely preventive maintenance of ACs, elevator, equipments (Printers/Copiers)
- ❖ Signages need to be put related to location of the office, emergency exit, no smoking areas, elevator usage safety, fire safety etc. (The demand for signages was considered and they have now been placed at the required locations).
- ❖ Proper documentation and reporting of hazards, risk assessments conducted, incidents at the work place, training sessions conducted must be done.

## 4.2 HEALTH AND SAFETY POLICY

**Policy Number:**

**Policy Name: Occupational Health and Safety policy**

**Date Approved:**

**First Effective Date:**

**Policy Statement of Intent:**

NABH is committed to providing and maintaining high standards of safety and health in the workplace. This will be achieved by maintaining a safe and healthy working environment and through continually improving systems for managing safety and health.

It is the organization policy to do all that is reasonably practicable to prevent personal injury and damage to property and to protect everyone from foreseeable work hazards within their control, including the public in so far as they come into contact with the organization's activities.

Accordingly NABH shall:

- ❖ Provide and maintain a safe and healthy working environment with adequate welfare facilities and arrangements
- ❖ Maintain, so far as is reasonably practicable a safe and risk free environment and provide safe means of access to and egress from workplace areas
- ❖ Promote and nurture an organizational culture that adopts safety and health as an integral component of its management philosophy.

- ❖ Provide comprehensive information, instruction, training and supervision, ensuring in so far as is reasonably practicable, the health, safety and welfare of every employee.
- ❖ Ensure that health and safety arrangements deemed necessary are appropriately maintained monitored, recorded and reviewed.

All persons charged on behalf of NABH with the management of others, are responsible for the safety and health standards of the working environment, operations, and all staff and visitors under their control.

Staff shall accept their joint responsibility and cooperate in ensuring that the highest possible safety and health standards are maintained in all activities.

Scope:

This policy applies to all premises where NABH is either the ‘employer’ or is in control of the premises.

The policy shall be communicated to all the staff members of NABH.

Authorized by:

Signature

Director

NABH

### **Content**

1. Introduction
2. Definition of Terms
3. Responsibilities
4. Procedures: Fire procedures, First aid provision, Accident/Incident Reporting
5. Risk Assessment/Safe working policies
6. Training
7. Record maintenance and Documentation

## **1. Introduction**

- 1.1 Information is provided to the Health and Safety Coordinator on key elements of workplace safety stating minimum requirements and/ or guidance to support the risk assessment process.

## **2. Definition of Terms**

Health & Safety Risk Assessment – An ‘overarching’ technique used to manage health & safety risks generally.

‘Workplace’ –Includes the NABH office.

## **3. Responsibilities**

### **3.1. Health and Safety Coordinator:**

- ❖ Overall responsibility for the Health and Safety at work of all employees, visitors.
- ❖ Ensure that there is an effective policy for Health and Safety.
- ❖ Make sure that the company Health and Safety Policy is understood at all levels.
- ❖ Periodically appraise the effectiveness of the policy and will ensure that any necessary changes are made.
- ❖ Jointly with Health and Safety Committee and employees, establish Health and Safety arrangements and safe working practices for the company.
- ❖ Ensure adequate resources are made available to meet the Health and Safety requirements.
- ❖ Communicate on Health and Safety matters to all employees.
- ❖ Ensure that all accidents and incidents throughout the organization are properly recorded, reported.
- ❖ Ensure that all equipment is maintained and safe to use, that all the necessary safety equipment is available and that it is used and that there is safe access to and egress from all work areas and that the workplace is safe.
- ❖ Encourage positive response from employees into orderly working and hygienic habits to organize and maintain a hazard free office environment.

**3.2.Health and Safety Committee:** comprises of management representatives and the Health and Safety Coordinator.

- ❖ The Committee meets on a yearly basis, and discusses organization-wide issues, including planning, policy development, and monitoring health and safety.
- ❖ The Committee also takes part in resolving major safety and health concerns.

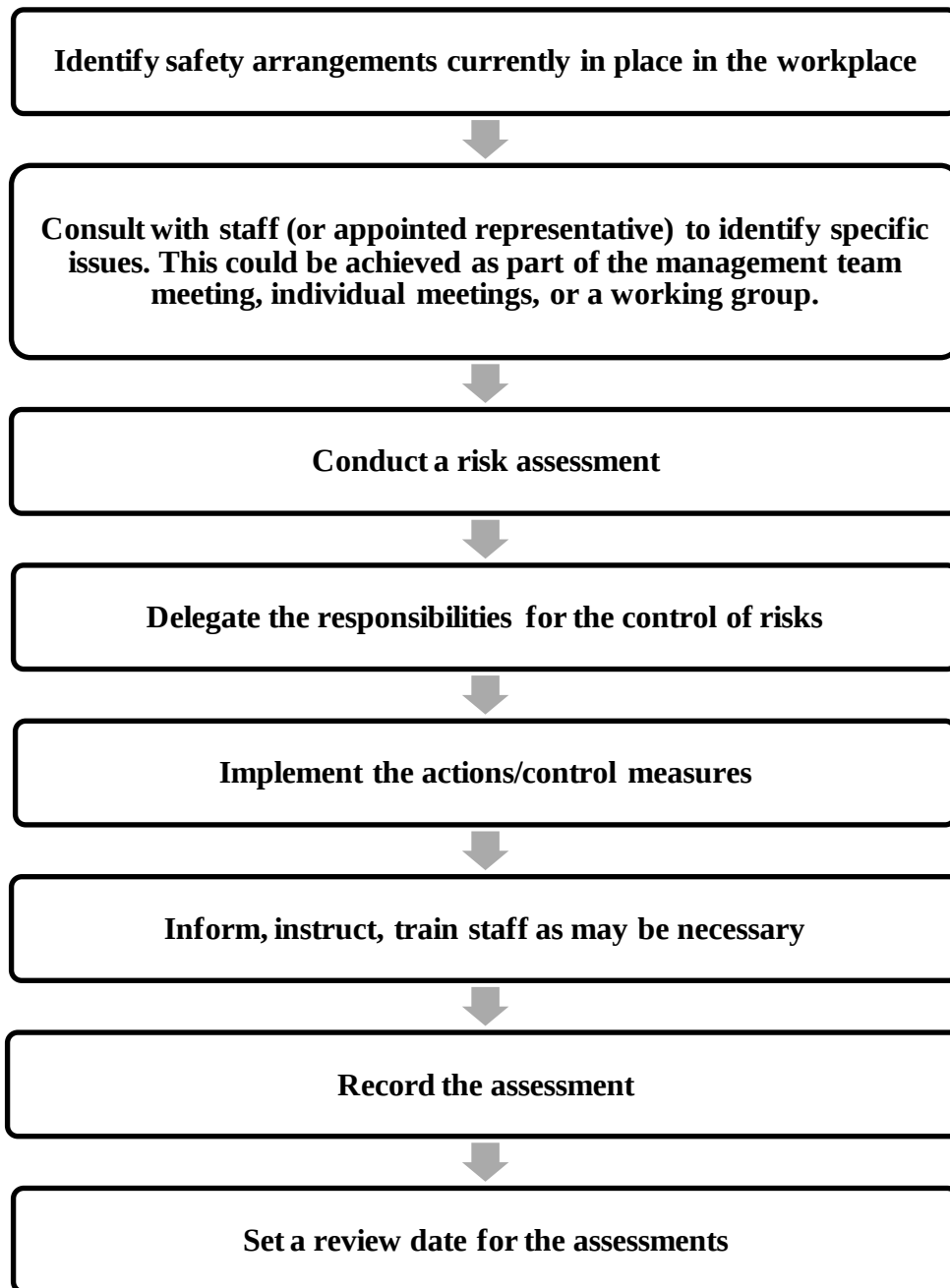
**3.3.Employees:**

- ❖ Follow any defined procedures, as identified by risk assessment.
- ❖ Notify management of any perceived shortfall in health and safety arrangements.
- ❖ Report hazards, accidents/incidents to the coordinator.

## **4. Procedures**

### **4.1.Procedure for assessing Health and Safety needs**

The following procedure should be used as an overview to the process of identifying and providing suitable employee safety facilities from the organization's perspective.



**Fig. 4. Procedure for assessing Health and Safety needs**

## 4.2. Accident Reporting

Following admission of the First Aid procedure, all accidents/dangerous occurrences, whether or not injury is sustained must be reported to the Director who will ensure that the necessary procedure can become operational to determine what action is necessary, depending on severity of the incident i.e.:

- ❖ Apart from very minor incidents, the accident report form will be completed. (**Appendix 8**)
- ❖ In the case of a death, the police **must** be notified immediately by the Director e.g. by telephone. In major injury or condition, or dangerous occurrences accident report form must be filled and record must be kept.

The police **must** be notified immediately by the Director e.g. by telephone.

On completion of relevant accident report forms a thorough investigation will be carried out by the Director leading to the necessary corrective and preventative action being taken.

### Accident Investigation Report

In the event of a serious accident involving more than three days off work, a full accident investigation report should be completed.

This should include:

- ❖ Location; employee involved; employee status; equipment involved
- ❖ Date and details of the accident, including full description of the accident, and events leading up to the occurrence, as well as details of action taken after the accident.
- ❖ Details of protective equipment worn etc.
- ❖ Any Further Information like Employment and training history of injured person, any previous accident history
- ❖ Safety record, and safety devices fitted on any equipment involved
- ❖ Witnesses statements
- ❖ Action taken to prevent re-occurrence
- ❖ Audit to confirm that agreed action was carried out

#### **4.3. Fire Procedures And Arrangements For Evacuation Of The Premises**

- ❖ Management of NABH, is responsible for ensuring compliance with the Fire Safety norms and other related legislation of Delhi.
- ❖ All fire extinguishers are examined annually and are maintained in good efficient order. It is every employee's duty to know where fire extinguishers are located on site and not obscure their visibility.
- ❖ Timely checks, refilling and maintenance of the Fire Extinguishers is very important (at least yearly).
- ❖ Keep all Emergency numbers handy.eg. nearest Fire department numbers, nearest hospital numbers, police station numbers etc.
- ❖ Employees are reminded that the removal, damage or mischievous discharge of any fire fighting equipment is an infringement of the law. Anyone caught doing such an act could find themselves facing prosecution.
- ❖ Great care should be taken in the disposal of combustible materials that could fuel a fire.

## Emergency Evacuation:

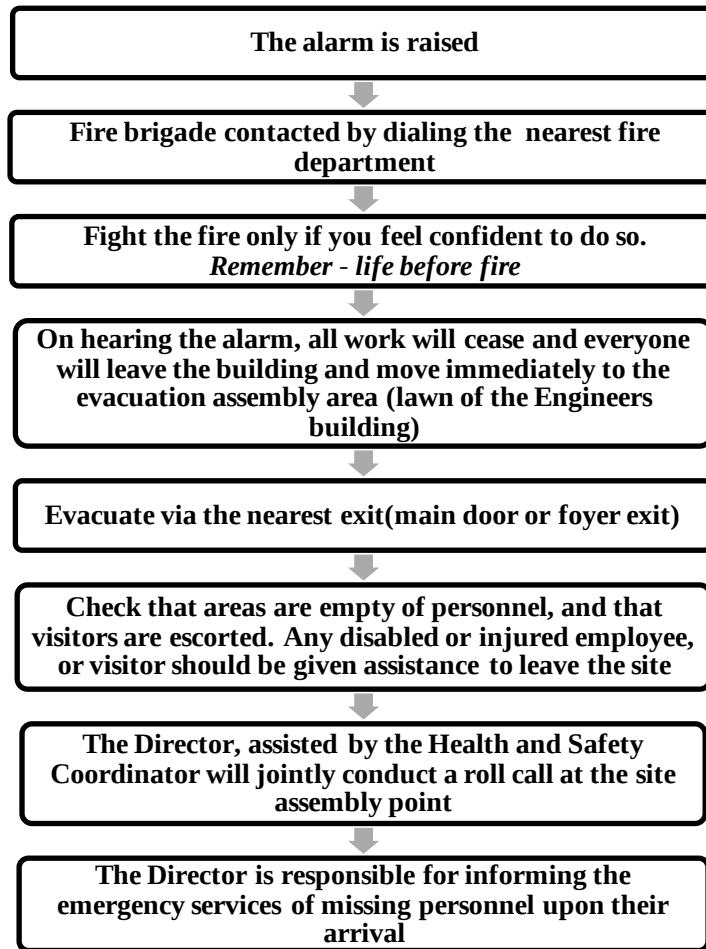


Fig.5. Emergency Evacuation Process flow

### 4.4. First Aid Arrangements

- ❖ A First Aid box is maintained at the work place in the Reception area and all staff members should be aware of the location of the box.
- ❖ The organization asks all personnel to ensure that First Aid provision is not abused and properly maintained.
- ❖ First Aid will be administered by a Qualified First Aider, in the appropriate area.

#### **4.5. Smoking Policy**

- ❖ In line with current legislation, NABH operates a **NO SMOKING** policy in all public areas of the company. Smoking is prohibited throughout the entire workplace. This policy applies to all employees, consultants, customers or members and visitors.
- ❖ It is every employee's duty to obey "No Smoking" signs and abide by this in the interest of law and health and safety. Failure to do so could lead to disciplinary action.
- ❖ Smoking is only allowed in the outside car park area or areas away from the building.
- ❖ This policy has been developed to protect all employees and visitors from exposure to second-hand smoke and to assist compliance with the legislation.

Exposure to second-hand smoke, also known as passive smoking, increases the risk of lung cancer, heart disease and other illnesses. Ventilation or separating smokers and nonsmokers within the same airspace does not completely stop potentially dangerous exposure.

- ❖ **Smoke Free Policy**

All new personnel will be given a copy of the policy on recruitment/induction.

Appropriate 'No smoking' signs will be clearly displayed at the entrances to and within the premises.

- ❖ **Non-compliance**

Disciplinary procedures will be followed if a member of staff does not comply with this policy.

Those who do not comply with the smoking law are also liable to a fixed penalty fine.

#### **4.6. Procedures for Reporting Faulty or Damaged Furniture and Equipment**

If employee sees any furniture or equipment which (s)he suspects is faulty, it is to be removed from by following the procedures below:

- ❖ Affix a sign on the equipment or furniture that clearly indicates it is faulty and that it should not be used. A 'HAZARD! Do Not Use' sign (full page, A4 or 4-per-page) can be printed and filled out or the person can get an A4 piece of paper on which they can write a message,

print their name and date it. (For example, “FAULTY CHAIR ---- DO NOT USE”, reported by XYZ on 19 April 2011.)

- ❖ Move the equipment or furniture (if safe to do so) to a corner of the room. This should be in a position that is out of the way of normal ‘traffic’ and room usage such that people are not going to use the faulty equipment/furniture or trip over it. If safe to do so, remove the equipment from the room and store in locked office.
- ❖ Contact, the administration department as soon as possible, to inform them of the suspected faulty/ damaged furniture or equipment.
- ❖ Ensure the following information is included in the report:
  - Type of equipment/furniture (e.g. chair, computer screen, overhead projector, etc.)
  - Description of the fault/damage (e.g. chair seat broken, puncture in computer screen, etc)
  - Location of the faulty/damaged equipment/furniture

## **5. Risk Assessment (18)**

- ❖ Risk assessment involves careful examination of the hazards identified with consideration given to:
  - The likelihood of the hazard leading to an incident that results in the injury or harm to an employee
  - The likely consequences should the hazard lead to an incident
- ❖ Using these criteria will assist in the correct assessment of the hazards identified and will help to prioritise the hazards for control. Descriptors for Likelihood and Consequences categories can be found in **Appendix 6**

- ❖ The first step is to determine the level of consequence should the hazard or hazardous work practice lead to an accident. This will involve consideration of the potential for injury/ill health and/or damage to property. Secondly consider the likelihood of the accident occurring. Use the risk matrix (**Table 2**) to determine the need for hazard controls and obtain the level of risk.

If the risk is deemed not acceptable, then a process of control must be implemented. Controls should be determined according to the “Hierarchy of Control” system described below. The following control elements should be 41inimize in the order presented and where appropriate used in conjunction.

- ❖ **Hazard Control (using the “Hierarchy of Control”)**

- Elimination
- Substitution
- Isolation
  - Barrier
  - Relocation
- Engineering
  - Equipment and Workplace Design
  - Automation
  - Containment
- Administration
  - Policy & Procedures
  - Maintenance Schedule
  - Reduction in exposure
  - Training and Information
- Personal Protective Equipment (PPE)

### **Elimination**

As the title suggests, this control measure involves eliminating or removing the risk in its entirety.

### **Substitution**

This form of control involves substituting a safer process or material for the hazardous process/material identified.

### **Isolation**

This control involves separating the hazard or hazardous work practice from employees other work areas. This may involve sectioning off the area by erecting barriers or by relocating either the hazardous work practice or the 'other' employees and their work practices.

### **Engineering Controls**

This method of control involves designing and/or adding physical safety features to plant or equipment.

#### — Equipment and Workplace Design

The provision of new and/or additional equipment or redesign of a workplace can be used to control identified hazards.

#### — Automation

Fully or partially automating a process removes the need for, or reduces the risk of, performing a hazardous task.

#### — Containment (ventilation, dilution, extraction)

Containing or drawing away a hazard at the source so that personnel are not exposed.

#### — Guarding

Guards must be provided when there is the potential for people to come into contact

With hazardous situations to ensure that no part of the person (including hair, clothing etc.) can be caught in the moving part.

### **Administrative Controls**

This type of control is most effective when used in conjunction with measures mentioned above or as an interim control whilst more effective control measures are developed and implemented. It requires systems to be established or amended in order to control the risk presented. Most often it requires the assessment and modification of the task(s) performed. It may include measures such as:

12. Amendment or establishment of new Policy and Procedures. For example: developing documented safe work practices for a hazardous task, or implementing restrictive policy to prevent staff from coming in contact with identified hazards.
  - (iii) Limiting the exposure of personnel to elements that are only hazardous when they exceed a certain threshold. These types of hazards can include: noise, chemicals etc., and can be controlled by introducing elements as simple as job rotation.
  - (iv) Providing training and information in safe work practices and other occupational health issues so that personnel can work safely.

### **Personal Protective Equipment (PPE)**

PPE is not a particularly effective control method and should only be used:

12. When all other control measures are impractical; or
  - (ii) In conjunction with other more effective, control measures.

### **Evaluation and Monitoring**

Finally, it is crucial that all control measures implemented are evaluated and monitored. This can be achieved through collating anecdotal evidence and through revision of incident/hazard statistics for the area. Once the desired outcome has been achieved through implementing the appropriate controls, the monitoring of the systems must be on-going to ensure that control measures are maintained and do not become out-dated.

Ensure that the monitoring and review of the risk management program captures information such as:

- ❖ Whether control measures are being implemented and used correctly

- ❖ Whether solutions to workplace hazards are achieving the desired results
- ❖ Whether risk management processes and initiatives are working
- ❖ What has been done to control risks and what remains to be done
- ❖ Whether there are any new problems which have resulted from the introduction of risk control measures
- ❖ Whether new risk control measures are required.

Conduct systematic monitoring and review of the workplace to ensure that no new hazards are introduced. New hazards may arise through:

- ❖ The use of new technology, equipment or substances
- ❖ The introduction of new work practices or procedures
- ❖ A change in work environment (new workplace)
- ❖ The introduction of new staff with different skills or knowledge levels.

## **6. Training**

**6.1.** Training to support the general risk assessment process

**6.2.** Training of employees on Fire safety, Ergonomics etc.

## **7. Record maintenance and Documentation**

The monitoring and review process is also assisted by effective record keeping. Records help to identify hazards and review the effectiveness of risk control measures.

Records should be kept that show:

**7.1.** Records of the training sessions conducted

**7.2.** Records of the risk assessments done

**7.3.** Control measures implemented

**7.4.** Record of damaged/faulty furniture or equipment

### 4.3 ENVIRONMENTAL SAFETY POLICY

**Policy Statement:**

NABH will regard the promotion and preservation of the environment as a mutual objective for management and employees at all levels.

NABH is fully committed to protecting and enhancing the quality and variety of its working environments, and is committed to working pro-actively with, and communicating this policy to the employees, clients, external influences to achieve a safer, cleaner, healthier and sustainable environment.

The objectives of this policy are to:

- ❖ Reduce the production of waste and encourage wherever possible it's re-cycling.
- ❖ Encouraging greater staff involvement by energy awareness training and the understanding of environmental issues and continual environmental improvements.
- ❖ Encouragement of staff to become more efficient and sustainable in their use of, and the preservation of energy.
- ❖ Prevent pollution and nuisance.
- ❖ Management of the safe and effective disposal of waste materials.
- ❖ Maintain the office and surrounding areas in a clean and tidy condition to ensure minimum impact on the staff, visitors and neighbours.

This policy will be communicated to all staff members of NABH.

Authorized by:

Signature

Director

NABH

## 4.4 ERGONOMICS GUIDELINES FOR NABH STAFF

### Computer Workstation Adjustment Worksheet (19)

#### How to use this Worksheet:

Using a hardcopy of this worksheet, sit at your computer workstation. Start at number 1 below and adjust yourself and your equipment as best you can within the constraints of your workstation. It may be helpful to work with one of your workmates so they can assist with difficult adjustments and look at your posture if necessary. If you are unable to make the desired adjustment, make a note in the “Comments” column. Once you have completed the whole worksheet, review the notes you have made in the comments column with your Health and Safety Coordinator. Together, prioritise the actions that should be taken and decide on a course of action. The form should be kept and filed by your Health and Safety Coordinator.

| Steps to Adjusting your Computer Workstation                                                                                                                                                                                          | Reasons for Adjustment                                                                                                                                                                                           | Comments |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1. SEAT: Adjust the tilt of your seat so it is parallel to the floor.                                                                                                                                                                 | A tilted seat could cause pressure on the back of your leg and hinder blood flow, potentially resulting in a DVT (Deep Vein Thrombosis or blood clot).                                                           |          |
| 2.LUMBAR SUPPORT: Adjust the height of the backrest so the low back support (bulge) is in the small of your back.<br><b>Note:</b> Ensure your bottom is right back in the seat and then sit up straight to adjust the lumbar support. | Maintaining the curves in your spine, especially the low back, means that all the structures in your back (bones, muscles, discs, etc) are in their intended position, helping to prevent discomfort and injury. |          |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>BACKREST TILT: Adjust the tilt of the backrest to promote comfortable, upright sitting.</p> <p><b>Note:</b> The backrest and the seat tilt should be able to be adjusted independently.</p>                                                                                                                                                                                                                                                           | <p>Leaning back too far results in the neck having to stay in a forward bending position, however staying upright puts the neck and the rest of the spine in a better position.</p>                                                              |  |
| <p>4. ARMRESTS: Remove the armrests from your chair, or ensure they are back far enough to allow you to get close enough to your desk (your stomach should be right up against the desk so there is support for your arms on the desk itself). If you have armrests, they should be height adjustable.</p>                                                                                                                                               | <p>Fixed armrests can prevent you from getting close enough to the desk, resulting in sitting on the edge of the chair, leaning forward or reaching to get close enough to the keyboard/mouse.</p>                                               |  |
| <p>SEAT HEIGHT: Adjust the height of your seat so that when you sit up straight:</p> <ul style="list-style-type: none"> <li>• your shoulders are relaxed,</li> <li>• your elbows are in line with the home keys on your keyboard and remain close to the side of your body,</li> <li>• your forearms are parallel to the ground or angled slightly downward.</li> </ul> <p><b>Note:</b> If your desk is height adjustable, adjust the height of your</p> | <p>In this position, your muscles in your fingers, forearms and shoulders will perform at their peak because they are at their strongest. Performing computing tasks in this position will decrease the likelihood of discomfort and injury.</p> |  |

|                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                     |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| seat first, then adjust the desk height so the above is attained.                                                                                                                                                                                                                                                              |                                                                                                                                                                                     |  |
| 6. FOOTREST and LEGROOM:<br>Ensure your feet rest flat on the ground and your thighs are parallel to the ground. If this is not possible, you will need to get an appropriate footrest, adjusted to the correct height. Also ensure that you have enough room under your desk so your knees and feet are not hitting anything. | If your legs are dangling or cramped, this could cause pressure on the back of your leg and hinder blood flow, potentially resulting in a DVT (Deep Vein Thrombosis or blood clot). |  |
| 7.Ensure your keyboard and monitor are located directly in front of you.<br><b>Note:</b> When typing, centre body between the “G” and “H” keys.                                                                                                                                                                                | This will prevent excessive, sustained neck and wrist positions which could result in discomfort and injury.                                                                        |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>8.KEYBOARD: Adjust your keyboard height adjustment pegs so they are flat (touch typists) and so that your wrists are straight.</p> <p><b>Note:</b> Hunt-and-peck typists (people who need to look at the keys to type) should have the pegs up, so they do not have to bend their neck as much.</p> <p><b>Note:</b> If you are a touch typist, have small wrists, type for more than 4 hours a day and/or have wrist, forearm, elbow and/or shoulder pain, you may want to try an ergonomic (split) keyboard.</p> | <p>By keeping your wrists in a neutral position (extended middle finger is in line with forearm and slight backward bending of wrist) you give the muscles a greater mechanical advantage and decrease the risk of Carpal Tunnel Syndrome.</p> |  |
| <p>9.MOUSE: Place your mouse next to and at the same height as your keyboard.</p> <p><b>Note:</b> Ideally, to minimize strain on your wrist, a cordless, infrared mouse should be used.</p>                                                                                                                                                                                                                                                                                                                          | <p>If you have your keyboard on a lower level than your mouse, your mousing shoulder will have to do more work in a poor position, placing it at greater risk of being injured.</p>                                                            |  |
| <p>10.Ensure your wrists and forearms are not resting on hard surfaces or sharp edges.</p> <p><b>Note:</b> A gel support for keyboard and/or mouse is an easy, effective solution.</p>                                                                                                                                                                                                                                                                                                                               | <p>This can cause discomfort and hinder blood flow.</p>                                                                                                                                                                                        |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>11. MONITOR: Adjust your monitor so that:</p> <ul style="list-style-type: none"> <li>• The top of the screen is at eye level or slightly below,</li> <li>• You can reach your arm straight out and your fingertips cannot touch the screen,</li> <li>• The screen is tilted to enable easy viewing and reduce glare (if glare is a problem, get a glare reducing screen or move your workstation).</li> </ul> | <p>If your screen is too low or too high, you will have to either flex or extend your neck which can stress the neck muscles.</p> <p>Having the screen at fingertip length helps decrease eye strain</p> |  |
| <p>12.DOCUMENT HOLDER: Place your document holder so it is between your keyboard and monitor (preferred position) or next to and at the same height as your monitor.</p>                                                                                                                                                                                                                                         | <p>A document holder should be used so that documents you are typing from are not on the desk, causing you to bend and hold your neck forward to read them.</p>                                          |  |

**Table 10: Computer Workstation Adjustment Worksheet**

### **Other Tips for Computer Use**

#### **❖ Posture:**

- Change your posture regularly – Avoid staying in one posture for more than 30 minutes.
- The body is not meant to be in one position for an extended period of time. Our bodies are designed to move and be flexible; so get out of that chair, take a walk, do some stretches, get moving!
- If you are going to talk for more than 3 minutes, use a speakerphone or a headset.
- Do not cradle the phone between your ear and your shoulder – this is one of the most common causes of neck pain in office workers.

- Try using the mouse on the left side to reduce the amount of work and the reaching distance of your right arm.
- Did you know that the keyboard was originally designed to have the letter keys in the middle, the number pad on the right and the mouse on the left? (so you don't have to reach across the number pad)
- Learn to touch-type or use voice recognition software so you do not have to repeatedly bend your neck forward to find the correct keys.
- Excessive neck bending can cause muscle pain, shoulder pain and/or headaches; plus you will become more productive if you don't have to spend as much time typing one document or e-mail!

#### ❖ **Eye Strain:**

- Use a larger font and/or magnification to avoid eye strain.
- You can do this by selecting the “View” tab, then “Zoom” on the drop-down menu (in Word). Either select the percentage you want to zoom in (120% is a good place to start) or select “Page Width” for the document to zoom so it fits the width of the page.
- Periodically focus on distant objects and blink frequently.
- This gives your eyes a rest and helps to prevent premature degeneration of your eyesight.
- Ensure the lighting is appropriate for your task.

#### ❖ **Work Organisation:**

- Limit computer use to 1 hour at a time and take breaks every 30 minutes
- Stand up and do some stretches.
- Arrange your workstation based on your task and vary your tasks throughout the day.
- Place things that you use regularly close to avoid excessive and repetitive reaching and bending.

#### ❖ **Lifestyle:**

- Maintain your general fitness. Keep yourself strong, flexible and able to cope with the everyday stress of work or study.

- If you sit all day at work, do something active when you get home (walk, run, cycle, swim, yoga/pilates, social sport).
- This will re-energise your mind and body and help to prevent muscle wasting and other problems associated with inactivity.

**Note:** Ergonomic guidelines by OSHA related to computer workstations have been shared with the staff at the workplace. **(13)**

## 5.. REFERENCES

1. Facts on safety at work. International Labour Organization. ([http://www.ilo.org/global/About\\_the\\_ILO/Media\\_and\\_public\\_information/Factsheets/lang-en/docName-WCMS\\_067574/index.htm](http://www.ilo.org/global/About_the_ILO/Media_and_public_information/Factsheets/lang-en/docName-WCMS_067574/index.htm) accessed 16 April 2009).
2. World Health Organization ([http://www.who.int/occupational\\_health/en/](http://www.who.int/occupational_health/en/) accessed 16 April 2011).
3. Ylikoski M, et al. Health in the world of work: workplace health promotion as a tool for improving and extending work life. Helsinki, Finnish Institute of Occupational Health, 2006. (Reports of the Ministry of Social Affairs and Health 2006:62.) pages 3-4.
4. The International Society for Quality in Health Care Inc, International Organisation Standards for Healthcare External Evaluation Organisation, Organisation survey tool, Third Edition, January 2008 (Isqua/survey tool kit/standard 3 guidance).
5. Cakir, A, Hart, DJ and Stewart, TFM, (1980), Visual Display Terminals, Wiley.
6. Corlett, N, Wilson, J and Manenica, I, (Editors), (1986), The Ergonomics of Working Postures –Models, Methods and Cases, Taylor & Francis.
7. Grandjean, E, (Editor), (1984), Ergonomics and Health in Modern Offices, Taylor & Francis.
8. Haartz, JC and Sweeney, MH, (1995), Work-Related Musculoskeletal Disorders : Prevention and Intervention Research at NIOSH. In Nordman, H, Starch, J, Tossavainen, A and Viikari-Juntura, E, (Editors), Proceedings of the FIOH-NIOSH Joint Symposium on Occupational Health and Safety, pp. 135-141.
9. International Labour Organisation, (1997), Listening to Our Pain – Preventing Workplace Injuries and Illnesses Through Ergonomics, World of Work, No. 21, September/October.
10. Sharma, RM, (1997), Health and Safety Problems in Computerised Offices : The Users' Perspective. In Robertson, SA, (Editor), Contemporary Ergonomics 1997, Taylor & Francis.
11. Gough, TG and Sharma, RM, (1998), Health and Safety in Information Technology – An International Educational Issue. In Banerjee, Hackney, Dhillon and Jain (Editors), Business Information Technology Management: Closing the International Divide, Har Anand Publications.

12. Sharma, RM, (1998), Is a Prescription of Physical Changes Sufficient to Eliminate Health and Safety Problems in Computerised Offices? In Hanson, MA, (Editor), Contemporary Ergonomics 1998, Taylor & Francis.
13. OSHA E-tools home: Computer Work stations, (<http://www.osha.gov/SLTC/etools/computerworkstations/index.html> accessed 17 April 2011).
14. OSHA Self inspection of work place (<http://www.hunterconsulting.com/SAFETYANDHEALTHPROGRAM.pdf> accessed 17 April 2011).
15. Delhi Building byelaw related to Fire, Delhi Fire Services, (<http://dfs.delhigovt.nic.in/regulations/laws.html> accessed 16 April 2011).
16. Delhi Prohibition of Smoking and Non-Smoker's Health Protection Act, 1996 (<http://policy.mofcom.gov.cn/en/flaw!fetch.html?id=9527e778-977e-4451-b668-7c93c3f288fe> accessed 16 April 2011).
17. Australian National University. Occupational Health and Safety Improvement: Assessing Risk. Australian National University Strategic plan Version 5, 2010.
18. Edusafe. Making the workplace safe. Curtin University of Technology, November 2005.
19. Victoria University. OHS Safe and Healthy Working Policy, Version 1. Victoria University Central Policy Register, 2009.
20. Alli Benjamin O. Fundamental Principles of Occupational Health and Safety. Geneva, International Labour Office, 2001.