GIG CYMRU NHS WALES Bwrdd Iechyd Prifysgol Caerdydd a'r Fro Cardiff and Vale University Health Board	**Reference Number:** UHB 094 **Version Number:** 3 **Date of Next Review:** 09/12/2021 **Previous Trust/LHB Reference Number:** Trust ref no 160

Thermal Comfort Procedure

Introduction and Aim

There has been a dramatic rise in the number of requests for comfort cooling to off set the effects of internal and solar heat gains. The former are mainly attributed to computers, printers, photocopiers, fax machines, water coolers, fridges, research equipment etc, all releasing heat to the internal environment.

Under the Health and Safety at Work etc Act 1974, employers must safeguard, so far as is reasonably practicable, the health, safety and welfare at work of employees. This includes providing a safe working environment without risk to health.

The Management of Health and Safety at Work Regulations 1999 require employers to assess the risks to workers and to take appropriate action to safeguard health and safety.

The Workplace (Health, Safety and Welfare) Regulations 1992 are the only piece of UK legislation that specifically addresses thermal comfort. They require:

* Workplaces to be adequately ventilated

* The temperature during working hours to be reasonable

* Thermometers to be provided in the workplace to measure temperatures.

Although the Regulations do not specify a minimum or maximum indoor workplace temperature, the accompanying Approved Code of Practice does recommend a minimum temperature of workrooms of at least 16°C (13°C if the work involves considerable physical effort). These temperatures do not apply to rooms where it would be unreasonable to maintain such temperatures, such as cold rooms or rooms open to the environment.

The Health and Safety Executive has issued guidance entitled " Managing Workplace Temperatures – Guidance for Employers" and Employee's Guide - Temperature

It stated that thermal comfort cannot be measured with a thermometer as it is affected by humidity as well as temperature. However, for most people, an acceptable zone of thermal comfort lies between 13°C and 30°C.

An organisation's health and safety risk assessment should address thermal comfort, and that employees or safety representatives should be asked whether they have any problems, such as difficulty in concentrating or gripping/handling equipment or loads.

There are six principal ways of controlling the thermal environment:

- Control the source - reduce/increase the temperature and/or insulate or clad the source of heat or cold;

- Control the environment - replace hot air with cold or increase air movement by ventilation or air conditioning, or replace cold air with heated air;
- Separate the source of heat or cold from the worker - erect barriers, shield the work area or restrict access;
- Control operations - limit the time that workers are exposed to heat or cold and/or control the amount of work that the workers have to do;
- Protect the worker - provide suitable protective clothing and/or equipment;
- Monitor the worker - ensure adequate supervision is provided.

Aim

- The aim of this document is to ensure the risks associated with thermal comfort are appropriately addressed.
- It is recognised that within finite resources such as finance and power consumption it is not possible to install air conditioning or air coolers in all affected areas, it is therefore the aim to ensure that these facilities are installed where they are of maximum benefit.
- To ensure that communication to affected staff is an essential requirement throughout the process.

Objectives

- Comply with the legal duties in relation to thermal comfort as follows

- *Health and safety at Work etc Act 1974*
- *Management of Health and Safety at Work Regulations 1999*
- *Workplace (Health, Safety and Welfare) Regulations 1992*

- Effectively manage thermal comfort through the risk assessment process and appropriate control measures

Scope

This procedure applies to all of our staff in all locations including those with honorary contracts

Equality Impact Assessment	An Equality Impact Assessment has been completed. The Equality Impact Assessment completed for the policy found there to be no impact.
Documents to read alongside this Procedure	Health and Safety Policy Risk Assessment and Board Assurance strategy Risk assessment and risk register procedure Severe weather contingency plan: Heatwave Maternity Risk Assessment Menopause Policy Health and safety risk assessment procedure

Approved by	Operational Health and Safety Group
Accountable Executive or Clinical Board Director	Executive Director of Workforce, Organisational Development
Author(s)	Head of Health and Safety Health & Safety Advisor (Environmental)

Summary of reviews/amendments			
Version Number	**Date of Review Approved**	**Date Published**	**Summary of Amendments**
UHB 1	01/12/2011	31/01/2012	Revised document Supersedes previous Trust document reference no 160
UHB 2	19/08/2015	05/10/2015	Minor amendments to reflect changes in organisation
UHB 3			Flowchart added and minor amendments

Contents Page

Appendices

1. Definition

Thermal comfort is not easily defined, as it is dependent on a range of environmental and personal factors. However, tthermal comfort may be defined as an environment, which ensures reasonable comfort for the majority of people in the workplace, for most people an acceptable zone of thermal comfort lies between 13^0C and 30^oC. This procedure relates to staff thermal comfort in the workplace.

2. Method

2.1 A sufficient number of thermometers should be available to enable temperatures to be measured throughout the workplace but need not be in each work area.

2.2 Where Staff, Managers or Safety Representatives within the area identifies an issue of thermal discomfort, the local manager should be approached to implement heat reduction/enhancement actions utilising the Thermal Comfort Guidance (Appendix 1). The following are intended to act as the trigger to indicate that a thermal comfort risk assessment may be necessary, and as such they are not prescriptive.

Air conditioned offices – are more than 10% of employees complaining of being too hot or too cold?

Naturally ventilated offices – are more than 15 % of employees complaining of being too hot or too cold?

All other indoor environments that may not have air conditioning – are more than 20 % of employees complaining of being too hot or too cold?

2.3 The lowest temperature should normally be above 16 °C or 13°C where the work involves severe physical effort. Where these temperatures have not been reached the manager will be responsible for implementing improved heating arrangements in coordination with the Estates department.

2.4 If these above actions fail to adequately reduce the concern relating to heat reduction / enhancement, managers shall together with the staff complete a risk assessment utilising the available form (Appendix 2).

2.5 Assistance in this can be given by the Health and Safety Advisers and any further identified control measure within the manager's ability should be implemented. Any shortcomings outside of the manager's control shall be taken to the department and/or Directorate Manager.

2.6 If the conditions still persist the Health and Safety Adviser shall be contacted who will validate the assessment and arrange for an environmental survey and monitoring to be completed within the area by the Environmental Adviser.

2.7 The Health and Safety (Environmental) Adviser shall on completion of the survey report their findings back to the manager together with any further recommendations. Prioritised recommendations that are considered significant or higher risk should be tracked through the Health and safety meetings for the

area concerned. CIBSE guidelines will be quoted in Health and safety, energy manager and estates reports and worked to where reasonably practical.

2.8 Where the survey identifies conditions have equalled or exceeded 28°C for 50 % of the working day for 3 days or more, the Health and safety (Environmental) Adviser shall pass the results to the Energy manager who shall initiate the Comfort Cooling Protocol. Please note that the initiation of the comfort cooling protocol and associated processes will not necessarily conclude that comfort cooling/air conditioning will be recommended or approved.

2.9 The suitability of air conditioning or air-cooling will be considered by the Energy manager.

2.10 Where it is concluded that air cooling or air conditioning is appropriate it will be the responsibility of the Departmental Manager to identify funding and agree timescales for the modifications. Temporary portable heating and cooling equipment shall only be brought in when justified by risk assessment, through the estates maintenance department to ensure other risks are not introduced eg fire risks with heaters, legionella risks with cooling equipment. Under no circumstances can personal portable fan heaters or air conditioners be brought into the Health Board.

3. Resources

The resources required to implement this procedure with regard to assessment, monitoring and expertise are already available within the establishment.

Costs relating to the installation, commissioning, controls, maintenance and operation/energy costs of air cooling and air conditioning are to be identified and funded from within the relevant applying department.

Departments or areas who have not identified sufficient funding to complete the required modification may bid for funding for projects over £5K from the Capital Budget, subject to the completion of this procedure, and will be considered against other demands and constraints relating to use of these monies.

4. Information

Line/Departmental Managers will ensure that they provide instruction to staff to ensure that they are aware of the Procedure for Thermal Comfort and of the corrective actions used.

All employees affected will be kept informed of the status of progress and of any identified ongoing control measures. They will be expected to co-operate with regard to complying with these controls and inform managers of any shortcomings in the arrangements.

Any enquiries regarding this procedure should be directed to: -
Health and Safety Department

5. Implementation

The Operational Health and Safety Group will ensure, on behalf of the UHB, that this Procedure is implemented. This will be re-enforced within Clinical Boards by local health and safety arrangements.

6. References

The Health and Safety Executive guidance entitled “Managing Workplace Temperatures – Guidance for Employers”.
Management of Health & Safety at Work Regulations 1999. Approved Code of Practice.
Workplace (Health, Safety and Welfare) Regulations 1992. Approved Code of Practice L24. (Second edition) published 2013
CIBSE Briefing 1: Keeping cool in a heatwave: top tips for facilities managers
CIBSE Briefing 2: Keeping cool in a heatwave: top tips for building users
BOHS Technical guide no 12: The Thermal Environment Second Edition & appendum to the second edition 2009
HSE Website – temperature / thermal comfort
Heat stress in the workplace – a brief guide, published by HSE 06/13

7. Equality

An Equality Impact Assessment has not been completed. This is because the procedure has been written to support implementation of the Health and Safety Policy. The Equality Impact Assessment completed for the Policy found there to be no impact.

8. Audit

It will be necessary to ensure that Clinical boards /Directorates are adhering to the requirements of this procedure. This will be monitored via a number of different methods e.g. workplace inspections/audits.

9. Review

This procedure will be reviewed every 3 years or as often as is necessary to ensure continued compliance with risk management guidance and legislation. It may also be necessary to review it to ensure that technological developments to aid patient’s care and diagnosis are accounted for.

The Operational Health and Safety Group will review the Procedure.

10. Distribution

This Procedure will be distributed in accordance with the UHB distribution document, and will be available on the UHB Intranet.

APPENDIX 1

Guidance for Manager on Thermal Comfort

This guide provides managers with advice on how to ensure thermal comfort for employees during hot or cold weather. It covers most indoor workplaces, but does not address extreme conditions, such as:

* Work outdoors in hot/cold weather

* Work with hot processes

* Work in humid conditions, such as laundries

* Work in cold environments, such as cold stores

* Work, which requires special protective clothing to be worn.

Where extreme environments have been identified a suitable risk assessment including the development of a standard operating procedure should be completed by the manager. Further advice can be obtained from the Environmental Health & Safety Advisor.

Managers need to consider:

The environment - air temperature, radiant temperature, relative air humidity, ventilation, air movement, climatic and seasonal variations and building design.

The individual - the type of work being done; the amount/type of special or protective clothing/equipment worn; the age, sex, state of health and fitness of the individual; how long the individual is exposed to the heat/cold and special groups of people such as pregnant workers and young people.

The activity – will thermal comfort actions such as opening windows or doors breach confidentiality or dignity of patients or increase the personal safety risk?

Although a thermometer must be provided within the area, thermal comfort cannot be measured with a thermometer as it is affected by humidity as well as temperature. However, for most people, an acceptable zone of thermal comfort lies between 13°C and 30°C.

The UHB health and safety risk assessment should address thermal comfort. Staff or safety representatives should be asked whether they have any problems, such as difficulty in concentrating or gripping/handling equipment or loads.

This guide identifies six principal ways of controlling the thermal environment:

* Control the source - reduce/increase the temperature and/or insulate or clad the source of heat or cold.

* Control the environment - replace hot air with cold or increase air movement by ventilation or air conditioning, or replace cold air with heated air.

* Separate the source of heat or cold from the worker - erect barriers, shield the work area or restrict access.

* Control operations - limit the time that workers are exposed to heat or cold and/or control the amount of work that the workers have to do.

* Protect the worker - provide suitable protective clothing and/or equipment.

* Monitor the worker - ensure adequate supervision is provided.

If the above controls do not guarantee thermal comfort, the following factors may have to be considered:

* Building design and layout - if correct this will effectively ensure thermal comfort, for example enclosing loading/unloading areas will protect workers from the cold during winter months.

* Air movement - this may be achieved by using small personal fans, large oscillating fans, exhaust fans, etc. Large fans may cause considerable noise and care must be taken to ensure draughts do not result.

* Air-conditioning - dependent on their size, these units can control air temperature, humidity and air movement.

* Evaporative cooling - these units produce a moderate reduction in air temperature and increase humidity.

* Thermal insulation - various materials, such as loose fills, foams, rock wool and boards, can be used as a barrier to heat flow and heat loss. They are, however, only effective where there is a temperature difference between the inside and outside of the building or between two areas inside a building.

There are various steps that a manager can take to ensure thermal comfort:

<u>Hot weather</u>

* Insulate hot plant or pipes.

* Provide fans.

* Make sure that windows can be opened.

* Shade windows with blinds or use reflective film to reduce the heating effect of the sun

* Place workstations away from direct sunlight and places/plant that radiate heat.

* Provide further facilities such as cold water and allow adequate breaks to enable workers to obtain cold water and cool down.

* Limit exposure to high temperatures and introduce flexible working practices.

* Relax formal dress codes but ensure, where appropriate, personal protective equipment/clothes are provided and used.

Ensure that all heat releasing equipment e.g. lighting, computers, printers, medical equipment etc is switched off when not in use and at the end of the working day to minimize internal heat gains.

Ensure that heat releasing non essential equipment ***is not located*** in the affected area and is relocated as necessary e.g. fridges, microwaves, kettles etc.

<u>Cold weather</u>

* Provide adequate heating or local heating.

* Separate cold products or cold areas from where people are working.

* Reduce draughts.

* If workers have to stand for long periods on cold floors, provide insulated duckboards, other suitable flooring or special footwear.

* Provide suitable protective clothing.

* Introduce work systems to limit exposure to a cold environment.

* Allow adequate breaks to enable employees to get hot drinks or warm up in heated areas.

Where a reasonably comfortable temperature cannot be achieved throughout a room, localised heating/cooling should be provided. If thermal comfort cannot be achieved by localised heating/cooling, further action should be taken, in conjunction with the Estates Teams and relevant policies/protocols.

Appendix 2

Thermal Comfort Flow Chart

Where staff, managers, safety representative identifies an issue with thermal comfort the local line manager should be approached to implement heat reduction/enhancement actions using the thermal comfort guidance in appendix 1.

↓

Where temperatures do not reach 16°C (or 13°C where the work involves severe physical effort) the manager will be responsible for implementing improved heating arrangements by liaising with estates maintenance department / Energy Manager.

↓

If despite the above actions there are still complaints from the workforce of thermal comfort, managers together with the staff will complete a risk assessment (appendix 3). Safety Advisors can offer advice on completing thermal comfort risk assessment and further recommendations should be implemented by the manager.

↓

Any shortcomings outside of the manager's control shall be taken to the department and/or directorate manager.

↓

If conditions still persist the health & safety advisor should be contacted. They will validate the assessment and arrange for an environmental survey to be carried out. Current CIBSE guidance on thermal levels will be quoted in monitoring reports.

↓

The health & safety (environmental) advisor will report their findings back to the manager and safety advisor with any further recommendations. Any significant recommendations of higher risk should be tracked through the health & safety meetings.

↓

When the survey identifies conditions that exceed temperatures of 28°C for 50% of the working day for 3 days or more the environmental advisor will pass the results to the energy manager who will initiate the comfort cooling protocol.

↓

Concludes air cooling or air conditioning is appropriate it will be the responsibility of the departmental manager to identify funding and agree timescales for the modifications. (Bid can submitted to capital for above 5k). Temporary portable heating and cooling equipment shall only be brought in when justified by risk assessment and only through the estates maintenance department.

Appendix 3

Assessment of Thermal Comfort Risk

Primary Location	
Exact Location (inc room number)	
Reported by	
Date	
Duration of problem	
Is the problem seasonal	

Previous actions/history	Previous actions at department/directorate level
Monitoring/previous reports/estates contacted?	

Risk Factors	
Temperature <24 °C	
24-28 °C	
28-30 °C	
>30 °C	
Humidity High/Low?	
Confidentiality risk if vented?	
Patient area?	
Young/Aged/Pregnant persons?	
Number of persons affected?	
Patient risk from air con?	
Type of area?	
Mechanical air changes? Vents?	
Heat gain from windows?	
Heat gain from mechanical?	
Heat gain from crowding?	
Work type:	
Light e.g. sitting	
Medium e.g. patient care	
Heavy e.g. Theatres, maintenance	
Required to wear PPE?	

Existing Control Methods	
Work practice	
Flexi Working?	
Ability to leave area?	
Relaxation of dress code?	
Frequency of breaks increased	
Ability to move work area from direct sunlight	
Area aspects	
Windows can be opened?	
Access to drinking water?	
Area to cool off?	
Solar film on windows?	
Blinds?	
Ventilation natural?	
Fans available?	
Estates aspects	
Shielding from heat source?	
Hot pipes/plant insulated?	
Local control of air con/cooling	
Cooling system last serviced?	
Ventilation mechanical?	
Air cooling?	
Air conditioning?	

Comments / Initial assessment of risk (If heat gain from equipment state type and how many)			
Completed by:		Date:	

Environmental Unit Assessment / Monitoring

HSEU Use

Completed by:	Passed to:
Date:	Date

*This form can be printed and completed manually. If you would prefer to complete electronically a word version can be found here.