SURGICAL SITE INFECTION POLICY BUNDLE: MANAGEMENT OF NORMOTHERMIA

Department / Service:	SCSD
Originator:	Mat Trotman
Accountable Director:	Clinical Director SCSD
Approved by:	Anaesthetics, Critical Care, Theatres & Sterile Services Directorate Governance Meeting
Date of approval:	21st June 2023
Review Date: This is the most updated document and is to be used until a revised version is in place	21st June 2026
Target Organisation(s)	Worcestershire Acute Hospitals NHS Trust
Target Departments	Theatres
Target staff categories	All clinical staff involved in surgical care of patients

Policy Overview:
This policy sets out the expected best practice in the patient's temperature being maintained at the optimum level during surgery. The aim is to avoid hypo or hyperthermia

Key amendments to this Document:

Date	Amendment	By:
9th June 2020	Environmental temperature section added	Directorate Meeting
15.6.23	Full Policy review	James Hutchinson (anaesthetist)

Contents page:

1. Introduction

Maintaining normothermia during surgery is important for essential for optimising immunity, coagulation, comfort, metabolic demands and healing.

2. Scope of this document

This document will cover all patients undergoing any procedure within WAHT theatres. Temperature management is a key area when minimising post-operative infections and all staff should consider this policy when treating patients. It is acknowledged that under certain clinical emergencies this process maybe missed if there is a threat to life.

3. Definitions

WAHT – Worcestershire Acute Hospitals NHS Trust
Hypothermia – Temperature below 36°C

4. Responsibility and Duties

4.1. Role of the senior operating surgeon/clinician

The senior clinician maintains overall responsibility for the maintenance of normothermia throughout surgical procedures or ensuring a suitable individual is assigned the task

4.2. Role of the Divisional Managers & Divisional Directors of Nursing

Divisional Managers & Divisional Directors of Nursing maintain overall responsibility for compliance with this policy within their areas. This includes ensuring that Senior Managers have agreed and instigated a structure that ensures all staff have been informed, educated and trained appropriately for completion of the agreed task.

4.3. Role of the Theatre/Departmental Managers

Theatre or Departmental Managers assume responsibility for the implementation of this policy on a daily basis. To ensure the health, safety and risk management standards are met and maintained. Ensuring regular audits are carried out to monitor compliance with this policy

4.4. Role of Individual Staff

The Trust expects all staff, including temporary members, to adhere to the principles of this policy at all times

5. Policy Detail

Every patient must be assessed for their risk of inadvertent perioperative hypothermia and potential adverse consequences before transfer to the operating theatre. Patients should be managed as higher risk if any two of the following apply:

- ASA grade II to V (the higher the grade, the greater the risk)
- Preoperative temperature below 36.0°C (and preoperative warming is not possible because of clinical urgency)
- Undergoing combined general and regional anaesthesia
- Undergoing major or intermediate surgery
- At risk of cardiovascular complications

For total operative times less than 30 minutes, only higher risk patients should be actively warmed (RCA, 2006).

Patient temperature must be measured and recorded within the hour before transfer from the ward to the theatre.

Whilst waiting for surgery the patient should be encouraged to keep active (where appropriate, considering their individual needs).

Where it is deemed appropriate patients will walk to theatre, an activity that will assist in maintaining normothermia.

Patients must be adequately covered on the ward and during transfer to the operating theatres. This includes dressing gown and suitable footwear e.g. slippers.

Environmental temperature

Extreme temperature in theatres can contribute to negative outcomes for patients by impacting on staff comfort, increasing fatigue or concentration levels. High continual temperatures and raised levels of humidity in particular can increase bacterial growth and therefore may contribute to increasing numbers of Surgical Site Infections

Theatre environmental temperature should be maintained between 18- 25°C with humidity at less than 60% to provide optimal working conditions for the surgical team and reduced risk of post-operative complications

For temperatures outside the optimal range:

- Teams must contact estates
- Alert their line manager
- Consider using another operating theatre
- Consider risks of continuing surgery for both patient and team
- Consider a datix incident record

Estates can confirm the temperature with the use of a calibrated thermometer.

If teams continue to work in periods of high temperatures, teams are encouraged to take regular comfort breaks to ensure their performance is in the interest of patient safety. Drinks (in closed receptacles) are allowed within the clinical environment. Limiting staff numbers in theatre may be given consideration once risk assessed.

Anaesthetic Care

The anaesthetic room must be kept warm during induction of anaesthesia and the patient should be kept free from draughts.

Patients must have their temperature measured and recorded before the administration of anaesthesia. This should be a tympanic measurement as skin temperature monitoring has limitations (NICE 2008).

Patients with a temperature below 36°C must be actively warmed and their temperature should be recorded every 15 minutes until normothermia has been established. Induction of anaesthesia must not begin unless the patient's temperature is 36°C. Intravenous fluids (500ml or more) and blood products must be warmed to 37°C using a fluid warming device fit for the purpose and used in accordance with manufacturer's instructions.

Use of active warming on the operating table is recommended and should be considered for all surgical procedures involving general or regional anaesthesia with expected duration greater than 30 minutes (NICE 2008). They must be used in accordance with manufacturer's instructions.

During procedures involving extensive body cavity exposure, consideration should be given to the use of under, upper, and lower body forced air-warming devices.

Time between prepping of the wound site and draping the patient must be limited.

Intraoperative

Surgical drapes should be prevented from getting wet.

The operating theatre ambient temperature should be maintained between the expected range of 18°C-25°C during the prepping and draping of the patient and at the end of the case. After the patient is draped and warming devices applied, the room temperature may be decreased for the comfort of the surgical team.

The peritoneal cavity can be lavaged with warm fluids. Surgical irrigation fluids used for arthroscopy, cystoscopy and hysteroscopy should be warmed. Urology patients especially those undergoing transurethral resection of the prostate are at risk high of hypothermia and its consequences.

All irrigation fluids must be warmed in a thermostatically controlled warming device to between 38 - 40°C.

The patient must be suitably covered at all times in order to reduce exposure.

Humidified moisture exchangers should be used for the administration of all volatile gases.

Post-anaesthetic care

Blankets should be applied to the patient after the sterile drapes are removed.

All patients should have a temperature measurement performed on arrival in the recovery unit.

Forced air warming blankets should be used in the recovery unit, as these have been associated with increased patient comfort, better perfusion, and decreased incidence of shivering (Ciufo et al, 1995).

If the patient's core temperature is below 36 °C, apply forced air warming blankets.

If the patient's temperature is below 36.0°C, they should be actively warmed using forced-air warming until they are discharged from the recovery room or until they are comfortably warm. Temperature should be recorded at every set of NEWS observations in post-operative care (initially every 5 minutes)

6. Implementation and Dissemination

6.1 This policy will be implemented and disseminated through the theatre communication routes to include staff meetings and the 08.00AM huddle. The policies will be located and stored on the electronic document library and there will be links to them from the theatre intranet homepage.

6.2 Training shall be given to all staff on the use of all forced air warmers found within theatres at WAHT and the current temperature measuring system

7. Monitoring and compliance

Regular infection control audits should be occurring to closely monitor post-operative infection rates.
Theatres should also conduct their own audit to monitor compliance with this policy and ensure strict adherence where appropriate.

8. Policy Review

This Policy with be reviewed every two years.
Revisions can be made ahead of the review date when the procedural document requires updating. Where the revisions are significant and the overall policy is changed, the author must ensure the revised document is taken through the standard consultation, approval and dissemination processes.

9. References

References: Code:

AfPP Principles of Safe Practice in the Perioperative Environment (2015)	

10. Background

10.1 Consultation

Key individuals involved in developing the document

Name	Designation
Susan Smith	
Mathew Trotman	
Andy Fryer	
Sally Ann Pickard	
Tracey Cooper	Deputy Director of Infection Prevention & Control

10.2 Approval process

This document has been circulated to the following individuals for comment/approval.

Name	Designation
Julian Berlet	Divisional Medical Director – Specialised Clinical Services
Tracy Pearson	Divisional Director of Operations – SCSD
Amanda Moore	Divisional Director of Nursing – SCSD
Paul Rajjayabun	Divisional Medical Director - Surgery

10.3 Equality requirements

Equality assessment Supporting Document 1

10.4 Financial risk assessment

Financial risk assessment Supporting Document 2

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	No	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	No	
7.	**Can we reduce the impact by taking different action?**	No	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval