

# OCCUPATIONAL THERAPY HEALTH AND SAFETY PROCEDURE FOR MAKING THERMOPLASTIC SPLINTS

|   |  |
|---|--|
| <b>Department / Service:</b>  | Occupational Therapy   |
| <b>Originator:</b>  | Occupational Therapy   |
| <b>Accountable Manager:</b>   | Charlotte Jack, Occupational Therapy Services Manager  |
| <b>Approved by:</b>   | Therapies Clinical Governance Approval Group   |
| <b>Date of Approval:</b>  | 13 <sup>th</sup> January 2023  |
| <b>Review Date:</b>   | 13 <sup>th</sup> January 2026  |
| <b>This is the most current document and should be used until a revised version is in place</b> |  |
| <b>Target Organisation(s)</b>   | Worcestershire Acute Hospitals NHS Trust   |
| <b>Target Departments</b>   | Occupational Therapy   |
| <b>Target staff categories</b>  | Occupational Therapists, Occupational Therapy Assistants and Occupational Therapy students working in hand therapy, rheumatology and neurology |

**Plan Overview:**

The following guidance has been developed to ensure the safety of patients, staff and students involved in the process of making splints in a variety of treatment settings, including treatment rooms, hospital wards, care home settings, and patient's own homes

**Key amendments to this Document:**

| <b>Date</b>   | <b>Amendment</b>                             | <b>By:</b>                                   |
|---------------|--|--|
| January 2023  | New document approved                        | Therapies Clinical Governance Approval Group |
| November 2023 | Add in considerations when splinting on ward | An Van Hyfte, Marie Mooney, Rebecca Harrison |

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**1 - Consent:**

- a) Prior to Occupational Therapy assessment and/or intervention involving splinting, the OT staff member will assess the capacity of the individual to provide consent to the procedure.
- b) Verbal consent for splinting will be obtained and documented in the patient notes as per the Outpatient Occupational Therapy Standard Operating Procedure.
- c) Where the patient is unable to provide verbal consent to the assessment or treatment, the assessment and/or treatment will be provided in the patient's best interests and this will be documented in the patient notes.

**2 - Assessment:**

- a) The referral will be triaged to determine whether a duty to assess will be opened, and to identify the priority level of the referral. This process may involve information gathering as appropriate, from patient notes, clinic letters, and operation notes and may also involve initial discussion with the patient by telephone.
- b) The OT staff member will ensure they are aware of the relevant Occupational Therapy clinical guidelines for specific conditions and any contraindications that may impact on treatment including splint provision. These can be located on the Trust Intranet Key Documents, using the search tool.
- c) Assessment for splinting will take account of individual patient needs including their clinical condition, lifestyle, environment and occupational performance.
- d) The splint will be made by, or under the supervision of a qualified OT in accordance with local or national splinting guidelines.

**3 - Environmental considerations:**

- a) The working environment will be prepared prior to splinting to include organisation of materials and equipment to ensure the safety of both staff and patients.
- b) Prior to commencing splinting in a non-clinical environment, Occupational Therapy staff will undertake a risk assessment to ensure that the health and safety of the patient and occupational therapy staff members can be maintained throughout the splinting process. If it is not possible for splinting to be carried out safely due to the environment, then the occupational therapy staff member will not commence splinting. Alternative options may then need to be considered.
- c) When preparing to splint in non-clinical environments, it may be necessary to arrange the environment to facilitate splinting safely. This may include moving furniture or clearing a work space near to a plug socket. If this is the case, verbal consent will be gained from the patient prior to commencing.
- d) The positioning and posture of the patient will be taken into account, for the comfort of the patient, and for the therapist to be able to position themselves to comfortably access the patient to make the splint.
- e) Working surfaces, splint bath and tools will be positioned at the most suitable working height, ideally an adjustable height work station.

- f) Occupational Therapy staff will follow trust manual handling guidelines, and will ensure they regularly vary their posture whilst splinting to reduce the risks associated with maintaining a static posture.
- g) All work surfaces, floors etc will be cleared away to remove splinting scraps after each patient treatment session.
- h) Where there may be fumes as a result of heating materials, therapists will ensure there is good ventilation.
- i) Cleaning and descaling products will be used and stored in accordance with COSHH regulations.
- j) Special environmental considerations may include:
  - When taking down surgical dressings, it may be preferable for the patient to sit supported on a treatment plinth. This may be reclined and can support the patient if any medical issues arise as a result of this process.
  - Where appropriate and where availability allows, the therapist will consider the use of a pillow, folded towels, a back support or foot rest.
  - Limbs/joints may be supported by the use of pillows or folded towels e.g. an elbow or heel pad as necessary.
  - A second member of staff may be required to provide additional support or assistance during the splinting process.
- k) When splinting in non-clinical settings, splinting equipment and materials require transportation. A wheeled trolley should be used and all items should be secured within the trolley, particularly tools and sharp items. Manual handling principles will be followed when lifting equipment in and out of vehicles.
- l) When fabricating a splint in a ward-environment a second person is required to manage environmental risks. An individual risk assessment is to be completed by the therapist and nurse in charge prior to fabricating splint.

#### **4 - Considerations relating to the use of tools:**

- a) All splinting tools will be kept in good working order.
- b) Regular checks will be completed and tools maintained or updated accordingly to ensure staff safety and utilise developments in ergonomic design.
- c) Power tools will be regularly checked and staff will follow manufacturer instructions for their safe use.
- d) When using power tools or sharp tools the therapist should not be interrupted.
- e) Sharps should be stored safely and should be kept in a locked storage when not in use. They should be kept out of reach of the patient throughout the treatment session.
- f) Disposable sharps will be disposed of in the relevant sharps box.
- g) Splinting material should be cut with splinting scissors when it is warm and pliable. The only exception to this is when cutting down large sheets of material which should be cut using a Stanley knife and ruler on a cutting mat.
- h) OT staff members will minimise any excessive, repetitive actions such as hole punching, use of scissors or shears.
- i) Cut thermoplastic materials will be rolled when heated to remove any sharp edges, and will be disposed of in the correct waste bin as per the Trust waste management guidelines.

**5 - Infection Control Considerations:**

- a) Appropriate PPE will be used by therapists whilst splinting, in line with current Trust guidance. When handling heated thermoplastic materials, gloves can be removed and hand hygiene procedures followed.
- b) Hand hygiene procedures will be adhered to as per trust guidance.
- c) Ensure all surfaces, tools used, and patient areas are cleaned with Clinell wipes before and after every treatment session.
- d) Splint baths will be emptied, cleaned and refilled in line with manufacturer guidelines.
- e) Splints which require reheating/remoulding will be cleaned prior to being heated in the splint bath.
- f) Dressings should be changed using an aseptic or clean technique as appropriate, in line with Trust guidance.
- g) Dressings, plasters and worn splints will be disposed of as per the trust waste disposal guideline.
- h) When splinting on a ward, local infection control procedures are to be adhered to and discussed with the nurse in charge as part of the risk assessment.

**6 - Heat Considerations:**

- a) Thermoplastic materials will be heated using a water bath or dry heat. If the patient is particularly sensitive to heat, then consideration should be given to the use of materials that soften at lower temperatures.
- b) Before applying the splint material to the patient, the therapist will check if the patient has any loss of or altered sensation. Before proceeding to mould the splint the material should be tested against skin with intact sensation.
- c) If there are any surgical wounds or other broken skin, these will be dressed and protected appropriately before applying the heated splint material.
- d) Stockinette sleeves may be used under the splint to give some additional protection against the heat.
- e) Equipment used to heat thermoplastic materials including heat guns, soldering irons, neoprene irons, and splint pans will be stored out of reach of the patient during the splinting process.
- f) Therapists will use tongs or spatula to remove heated thermoplastic materials from the splint pan.

**7 - Communication and patient education:**

- a) The OT staff member will explain to the patient what to expect and keep them informed of what is happening throughout the splinting process.
- b) Consent will be gained at every stage of the process and reassurance given throughout the treatment session.
- c) Verbal and written instructions will be given to educate the patient (or relevant care giver when appropriate) on the following:
  - The purpose and use of the splint.
  - Condition specific information.

- Wear and care precautions.
  - How to cleanse the splint?
  - The procedure for repair, review and replacement of the splint.
  - How to contact the relevant OT service if there are any concerns?
  - Where appropriate, what to do in case of emergency.
  - Plan for follow up.
- d) When providing a splint for a ward patient, the nurse responsible for the patient's care to be present when discussing instructions and demo splint application. Instructions to be written in patient's notes. Consider use of whiteboard and pinning splint instructions on the board above patient's bed.

**8 - Pressure considerations:**

- a) The OT staff member will take account of anatomical considerations such as bony prominences and ensure that the splint design accommodates these comfortably.
- b) Pressure points will be relieved by the use of padding applied before the splint is moulded.
- c) All splint edges will be smooth.
- d) Consideration will be given to the position and type of strapping applied to reduce the effects of pressure.
- e) Perforated materials may provide better ventilation and reduce the risk of moisture related pressure issues. Ventilation holes can be increased however caution should be taken to ensure they do not cause any additional pressure areas.
- f) Clear advice will be given on what to do should pressure areas become a problem after wearing the splint for any length of time.
- g) For ward patients: pressure concerns to be discussed with the nurse responsible for patient's care as part of the handover of splint instructions. If the patient has any existing pressure concerns, tissue viability and nurse in charge to be consulted prior to fabrication of splint.

**9 - Allergy considerations:**

- a) The therapist will check patient records for any known allergies, confirm allergy status with the patient and consider alternative materials if necessary.
- b) A stockinette lining sleeve may be considered for wear next to the skin as additional protection.

**10 - Follow up considerations:**

- a) A review appointment will be planned with the patient for any thermoplastic splint provided as per guidelines. This review may be virtual or face to face and the clinical reasoning for the choice documented in the patient notes.
- b) At the review appointment the splint will be checked to ensure it is achieving the planned objectives and that the patient is following the correct wearing regime.

Plans (e.g. for treatment progression, further follow up, discharge) will be agreed between the OT staff member and patient.

- c) For ward patients a follow up splint check to be part of the therapy plan. If the patient is to be discharged prior to the planned splint check, patient to be handed over to the out patient services to complete/ follow up splint checks. Patient's caregiver to be provided with splint instructions as part of the discharge planning. When patients are transferred to specialist centres for further rehabilitation, follow up of the splint to be completed by local therapists. Patient's caregiver to be given a leaflet to ensure they can contact the service if future follow up is required post discharge.

### **11 - Other Considerations:**

- a) Multiple treatment sessions may be required to complete a splint if the patient has difficulty tolerating the splinting process, for example due to fatigue or pain, or if multiple splints are required.
- b) Two therapists may be required, and these may include therapists from different specialities to meet the needs of patients with multiple or complex needs.
- c) Other additional precautions may be required with the following:
- Babies and children
  - Patients with skin conditions including psoriasis
  - Patients with sensory and or cognitive needs
  - Patients with hypertonicity
  - Patients taking specific medications including steroids
  - Patients with fluctuating swelling
  - Patients with healed ulcers
  - Patients with healing scars/new skin
- d) Splinting in other environments e.g. hospital wards, residential homes or patient's own homes potentially brings additional hazards. Therapists will complete a risk assessment prior to commencing the splinting process in these situations and will put in place mitigations to reduce the risks or make a clinical decision not to carry out splinting if it is deemed unsafe.
- e) Any concerns related to health and safety with splinting will be highlighted to the occupational therapy manager.



**Reference List**

NHS England and NHS Improvement 2019  
Standard Infection Control Precautions: National Hand Hygiene and Personal Protective Equipment Policy

Management of Infection Prevention and Control Policy WAHT-CG-043

Policy for Aseptic non touch technique WAHT-INF-048

Control of Substances Hazardous to Health Policy WAHT-CG-269

Wound Assessment and Management Guideline WAHT-NUR-090

Waste Management Policy WAHT-CG-481

Health and Safety Policy WAHT-CG-125

Royal College of Occupational Therapy: The Provision of Hand and wrist orthoses for adults with rheumatological conditions 2020



# Procedure

## Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

| Page/<br>Section of<br>Key<br>Document | Key control:             | Checks to be carried out to confirm compliance with the policy: | How often the check will be carried out:     | Responsible for carrying out the check: | Results of check reported to:<br><i>(Responsible for also ensuring actions are developed to address any areas of non-compliance)</i> | Frequency of reporting: |
|--|--------------------------|---|--|---|--|-------------------------|
|  | <b>WHAT?</b>             | <b>HOW?</b>   | <b>WHEN?</b>                                 | <b>WHO?</b>                             | <b>WHERE?</b>  | <b>WHEN?</b>            |
| 4                                      | Power Tools and Devices  | Trust/facilities PAT and equipment testing and servicing        | Annual                                       | Trust                                   | On site where equipment located  | Annual                  |
| 7                                      | Written Patient leaflets | Review in line with Key document governance                     | 3 yearly or when a clinical change indicated | Out-Patient Clinical Governance Group   | Trust Clinical Governance  | 3 yearly                |
|  |                          |   |  |   |  |                         |

**Contribution List**

This key document has been circulated to the following individuals for consultation;

| Designation   |
|---|
| Outpatient OT teams – Rheumatology, Neurology, Hand therapy |
| OT Clinical Governance                                      |
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|   |
|   |

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

| Committee                              |
|--|
| Therapy Management Clinical Governance |
|  |
|  |
|  |
|  |

**Supporting Document 1 - Equality Impact Assessment Tool**

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;



**Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form**  
Please read EIA guidelines when completing this form

**Section 1 - Name of Organisation** (please tick)

|  |   |                               |  |                      |  |
|--|---|-------------------------------|--|----------------------|--|
| Herefordshire & Worcestershire STP       |   | Herefordshire Council         |  | Herefordshire CCG    |  |
| Worcestershire Acute Hospitals NHS Trust | X | Worcestershire County Council |  | Worcestershire CCGs  |  |
| Worcestershire Health and Care NHS Trust |   | Wye Valley NHS Trust          |  | Other (please state) |  |

|                                  |   |
|----------------------------------|---|
| <b>Name of Lead for Activity</b> | <b>Rachel Chapman and Alison Hinton</b> |
|----------------------------------|---|

|  |                 |                  |                          |
|--|-----------------|------------------|--------------------------|
| <b>Details of individuals completing this assessment</b> | <b>Name</b>     | <b>Job title</b> | <b>e-mail contact</b>    |
|  | Rachel Chapman  | OT               | Rachel.chapman11@nhs.net |
|  | Alison Hinton   | OT               | Alison.hinton1@nhs.net   |
|  |                 |                  |                          |
| <b>Date assessment completed</b>                         | <b>21/12/22</b> |                  |                          |

**Section 2**

|  |   |   |  |
|--|---|---|--|
| Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.) | <b>Title:</b><br><u><b>Occupational Therapy Health and Safety Procedure for making thermoplastic splints.</b></u>   |   |  |
| What is the aim, purpose and/or intended outcomes of this Activity?                                | To ensure the safety of patients, staff and students involved in the process of making splints in a variety of treatment settings, including treatment rooms, hospital wards, care home settings, and patient's own homes |   |  |
| Who will be affected by the development & implementation of this activity?                         | <input checked="" type="checkbox"/> Service User<br><input checked="" type="checkbox"/> Patient<br><input checked="" type="checkbox"/> Carers<br><input type="checkbox"/> Visitors  | <input checked="" type="checkbox"/> Staff<br><input type="checkbox"/> Communities<br><input type="checkbox"/> Other _____ |  |
| Is this:   | <input type="checkbox"/> Review of an existing activity   |   |  |

|   |  |
|---|--|
|   | <input checked="" type="checkbox"/> New activity<br><input type="checkbox"/> Planning to withdraw or reduce a service, activity or presence?   |
| <p>What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.)</p> | <p>NHS England and NHS Improvement 2019 Standard Infection Control Precautions: National Hand Hygiene and Personal Protective Equipment Policy</p> <p>Management of Infection Prevention and Control Policy WAHT-CG-043</p> <p>Policy for Aseptic non touch technique WAHT-INF-048</p> <p>Control of Substances Hazardous to Health Policy WAHT-CG-269</p> <p>Wound Assessment and Management Guideline WAHT-NUR-090</p> <p>Waste Management Policy WAHT-CG-481</p> <p>Health and Safety Policy WAHT-CG-125</p> <p>Manufacturer Instructions for all equipment and materials used.</p> |
| <p>Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)</p>  | <p>All Outpatient OT services involved in splinting<br/>           Inpatient OT service leads involved in splinting<br/>           OT Senior Leadership Group<br/>           OT Clinical Governance Group</p>  |

### Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale.** Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

| Equality Group      | Potential <u>positive</u> impact | Potential <u>neutral</u> impact | Potential <u>negative</u> impact | Please explain your reasons for any potential positive, neutral or negative impact identified |
|---------------------|----------------------------------|---------------------------------|----------------------------------|---|
| Age                 | X                                |                                 |                                  | Nil significant noted   |
| Disability          | X                                |                                 |                                  | Nil significant noted   |
| Gender Reassignment | X                                |                                 |                                  | Nil significant noted   |

# Procedure

| Equality Group   | Potential <u>positive</u> impact | Potential <u>neutral</u> impact | Potential <u>negative</u> impact | Please explain your reasons for any potential positive, neutral or negative impact identified |
|--|----------------------------------|---------------------------------|----------------------------------|---|
| <b>Marriage &amp; Civil Partnerships</b>   | x                                |                                 |                                  | Nil significant noted   |
| <b>Pregnancy &amp; Maternity</b>   | x                                |                                 |                                  | Nil significant noted   |
| <b>Race including Traveling Communities</b>  | x                                |                                 |                                  | Nil significant noted   |
| <b>Religion &amp; Belief</b>   | x                                |                                 |                                  | Nil significant noted   |
| <b>Sex</b>   | x                                |                                 |                                  | Nil significant noted   |
| <b>Sexual Orientation</b>  | x                                |                                 |                                  | Nil significant noted   |
| <b>Other Vulnerable and Disadvantaged Groups</b> (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)   | x                                |                                 |                                  | Nil significant noted   |
| <b>Health Inequalities</b> (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies) | x                                |                                 |                                  | Nil significant noted   |

## Section 4

| What actions will you take to mitigate any potential negative impacts? | Risk identified | Actions required to reduce / eliminate negative impact | Who will lead on the action? | Timeframe |
|--|-----------------|--|------------------------------|-----------|
|  |                 |  |                              |           |
|  |                 |  |                              |           |
| <b>How will you monitor these actions?</b>                             |                 |  |                              |           |
| <b>When will you review this EIA?</b> (e.g in a service redesign, this |                 |  |                              |           |

|   |  |
|---|--|
| EIA should be revisited regularly throughout the design & implementation) |  |
|---|--|


**Section 5** - Please read and agree to the following Equality Statement

**1. Equality Statement**

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

|  |  |
|--|--|
| <b>Signature of person completing EIA</b>                      | Alison Hinton and Rachel Chapman   |
| <b>Date signed</b>   | 13/01/2023   |
| <b>Comments:</b>   |  |
| <b>Signature of person the Leader Person for this activity</b> |  |
| <b>Date signed</b>   | 13/01/2023   |
| <b>Comments:</b>   |  |



**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.

|    | <b>Title of document:</b>  | <b>Yes/No</b> |
|----|--|---------------|
| 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 which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval