G11	Standard	The moving and handling (M&H) of patients requiring casts, focusing on the fracture clinic and plaster room/ theatre

Systems are in place to cover all reasonably foreseeable handling situations in the **fracture clinic and plaster room/theatre.**

Justification

Rationale

Patients attending such clinics can present with very large and unwieldy limbs that require the application or removal of casts. The nature of these tasks tends to impose risks on staff and patients, and these risks must be managed.

Authorising Evidence

HSWA (1974); MHOR (2004 as amended); MHSWR (1999)

Links to other published standards & guidance

CQC (2010); NPSA (2008); Ruszala et al (2010)

Cross reference to other standards in this document

G2, 3, 8, 9, 10, 14, 15, 18, 19, 22, 32, K1 and K2

Appendices

4, 10, 11,13, 21, 25, 26

Verification Evidence

- requirements for compliance to achieve and maintain this standard

- An agreed approach, informed by evidence-based best practice, documented in the M&H policy, disseminated to all staff and embedded within the # clinic and plaster room/ theatre
- Risk assessments (for M&H) that are 'suitable and sufficient', robust and balanced
- Safe systems of work and standard operating procedures
- Individual person assessments where necessary – readily accessible and regularly reviewed
- Ergonomics is integral
- Information and communication systems – including documentation
- Competent, healthy staff, in sufficient numbers
- Training (theoretical and practical) and supervision
- Link workers are appointed, supported and active
- An environment conducive to good care (space, layout, etc.)
- Handling and other equipment that is suitable (fit for purpose) and readily available
- Investigation of and learning from adverse events, using root cause analysis to locate the cause and prevent a recurrence SFAIRP (Patient Safety First, 2009)
- Monitoring, audit and review of the verification evidence
- Points learnt from audit, and accident/ incident investigations and reports are disseminated and discussed with staff, with subsequent learning
- Reporting of the status (level of compliance) to the organisation
- Action plans to correct any lack of compliance
- The culture is one of learning rather than 'blame and shame'
- Staff work within protocols and record as necessary
- Patients are involved with their treatment and encouraged to move as independently as possible and where appropriate family carers are also involved

G11 Protocol - the M&H of patients requiring casts, focusing on the fracture clinic and plaster room/ theatre

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1. Introduction and background

In most hospitals the plaster room will be linked with the fracture clinic. This is usually situated near A&E. Where this is not the case A&E may have a subsidiary plaster room for use out of hours.

Traditionally Plaster of Paris (POP) was used (calcinated gypsum) as it was easy to work with when wet, dried quickly and formed a reliable fit around the limb for immobility to promote healing, and was also very cost effective. This has lately been replaced in increasing amounts by fibreglass, which although not as form-shaping as POP, is much lighter, dries faster and is therefore more manageable for both patient and staff. Internal fixation is now often the treatment of choice as it is secure, provides exact correction, enables early mobilisation and prevents pressure ulcers from either cast or bed (D'Astous et al, 2007).

2. Management, organisation, supervision and support

Where casting is elective, the management is straightforward. Bookings are made dependent on type of cast required and the number of staff necessary. Clearly a Colles' fracture cast would require one staff member whereas a hip spica or jacket for scoliosis could require five or more. Scheduled casting can require fewer staff as the patient may be more co-operative. Bookings should ensure that optimal numbers of staff are made available when a large casting procedure is planned. There must always be a team leader when several members of staff are involved.

In emergency situations the patient may be anaesthetized, making application very much more difficult and requiring a greater number of staff to ensure that the heavy load of the limb is correctly managed. This is to ensure that correct alignment is achieved to preserve the best possible limb position and function, and to prevent complications, whilst the member/s of staff applying the cast complete the task. It is often necessary to work quickly and possibly in an uncomfortable position. However, safer working postures can be achieved with the use of adjustable equipment (see sections 11 & 12).

3. Staffing levels

These must be sufficient to deal with the workload, which will be related, amongst other things, to the dependency levels of the patients (CQC, 2010). Task and risk assessments, properly carried out and translated into SOPs, will indicate or specify the number of handlers required for each M&H intervention (repositioning or a transfer manoeuvre), as well as their predicted frequencies, and this too will inform the planning of staffing levels.

As a guide, a busy plaster theatre in specialist hospital could have up to10 members of staff, at least one technician, a receptionist with the rest being nursing staff (RNOHa). Each case should be assessed individually during the planning phase to establish staffing requirements and this, together with an examination of data on peaks and troughs of demand, will contribute to the planning of overall staffing levels, for various times of day.

4. Staffing competencies (after Benner, as cited in Ruszala et al, 2010)

Novice:
Students passing through the departments who, whilst supernumerary, must be adequately supervised and instructed on M&H in these settings, as must any staff new to the department.

Advanced Beginner:
Members of staff who have had a relevant local induction and some instruction, but are not yet certificated as competent.

Competent:
Plaster technicians and nurses who have a casting certificate and are also competent in M&H. They will be expected to supervise others.

5. Environment

The working environment should be designed according to ergonomics principles; e.g. sufficient work space to accommodate the required number of staff and all of the necessary equipment, as well as adequate, easily accessible storage space for equipment not currently in use.

Depending on the type of application, simple Colles' # and below knee casts can be dealt with in individual cubicles. Spinal casts are usually done on a casting table to provide some light traction and full access to the torso whilst the cast is being applied (D'Astous et al, 2007). Although with modern instrumentation there is less of this performed now, it does still play a role in treatment of infantile scoliosis. Safety around the area must be assured if using POP as large amounts of water can get on the floor.

6. Communication and information systems

It is vitally important that all relevant information is conveyed to enable the correct booking of procedures and ensure staffing is optimal for the case load.

7. Treatment planning, including goal setting

Pre op and pre cast planning is essential, especially with paediatric patients. The children and their parents should be brought to the plaster room/theatre in advance to familiarise them with the environment, allay any fears and talk them through the plan. This should ensure maximum co-operation during application and post operatively (RNOH – patient group visit report to plaster theatre).

It is important to maximize function and minimize risk of complications and disability for patients. The provision of patient-centred care is paramount with this group. The involvement of family and carers from an early stage is vital. Injury to patient, staff and family carers must be prevented.

8. Moving & handling tasks

The following M&H tasks may be encountered: -

- On/off plaster table/couch/trolley
- Raising & lowering couch (see section 12)
- Toileting
- Into/out of wheelchair
- Pushing wheelchairs and trolleys
- Lifting and holding heavy limbs (see section 12)
- Positioning pillows/wedges
- Awkward movements and static postures whilst applying casts, removing casts and assisting in these tasks
- Carrying equipment and materials, and buckets/bowls of water

It is necessary to ensure that no misalignment damage is incurred, particularly when waiting for the cast to be applied, during application and whilst drying completes, and in use. Subsequently, care must be taken to maintain the integrity of cast and limb when assisting the patient or supporting the limb.

9. Moving & handling assessment

A generic assessment of the clinical areas, using the TILEO format, must be carried out and a dynamic assessment of each patient to determine their capability. Attention should be paid to the weight of the affected limb and the equipment available (see sections 11 & 12).

If patients have large casts, spicas, or body casts, they could remain in hospital for assessment of ADL, and the teaching of what they are able to do safely. Similarly, family carers will require teaching and assessment to ensure they assist their relatives or dependents safely. This is especially important for the carers of vulnerable adults and for the parents of children.

10. Moving & handling methods, techniques and approaches

The TILEOP assessment will lead to the development of safe systems of work, including where possible, the rotation of tasks.

Thorough and consistent training in the above tasks (section 8) from commencement of employment, with regular training updates and assessment, is essential.

Patients should be taught and encouraged to be as independent as possible as this helps them take responsibility for their own rehabilitation whilst in the cast.

These measures should reduce the risks to the staff and family carers.

11. Handling equipment

The following should be provided: -

- Hoist with a full range of patient-specific slings and ideally foot slings/leg supports
- Access to a heavy duty hoist for bariatric patients
- Limb lifter if hoist does not provide this facility
- Sliding equipment for transfer to/from trolley to/from plaster table, if body casting

12. Other equipment and furniture

The following should be provided: -

- Electric adjustable height couch/trolley with appropriate SWL to support all patients including bariatrics, and with split-leg facility

- Wheelchairs with efficient brakes, drop down and/or removable arms and foot rests to allow for cast application then repositioning once completed
- Wheelchairs with height-adjustable elevating leg rests for patients with long leg POPs/ casts (NB: Normal portering chairs may not be suitable)
- Pillows and wedges for positioning comfort, especially while the cast is drying
- Plaster trolley with castor brakes and swivel bracket bucket holder
- Plastic sheeting for protection
- Aprons – correct length to achieve protection, but not so long as to cause a trip hazard
- Chairs with arms in the clinical and waiting area
- Walking aids of various types

13. Risk rating

To carry out a 'suitable and sufficient' assessment, each task should be evaluated as part of the assessment process, so that the level of risk is quantified. Such assessments should be used, wherever possible, in the design of a safe system of work, and in highlighting any residual risks.

Various systems exist, but it is suggested that the NHS risk management 5x5 matrix, with 0-25 scale, is used for an overall evaluation of risk (NPSA, 2008) (see CD1, appendix 9 in folder 5). It is in common use, simple to use with 5 levels of risk, determined by a calculation of the likelihood or probability of an adverse event occurring multiplied by the severity of consequences or impact should it occur.

Likelihood/Probability (0-5) x Severity of Consequences or Impact (0-5) = 0-25

The values below are based on this system. Calculations lead to the following possible scores or ratings: -

1 – 6 = Low; 8 – 12 = Medium; 15 – 16 = High; 20 = Very High; 25 = Extreme

These ratings can then be used to alert staff, to prioritise action and justify any necessary expenditure to make the situation safer, on the basis of reasonable practicability. Options can be evaluated by considering risks, costs, and actions planned or taken, to reduce the level of risk to the lowest level that is reasonably practicable, which can thus be demonstrated.

REBA and RULA (Hignett & McAtamney, 2000 and 2006) should be used to assess the risks resulting from the postures and awkward movements encountered whilst applying casts to heavy limbs and assisting in these tasks. The combination of holding heavy loads, sometimes at a distance from the handler's body (centre of

gravity), for prolonged periods is likely to impose risks and these must be controlled so far as is reasonably practicable.

14. Involving the Moving & handling team

The M&H team should be contacted if advice is required. Although the M&H team will be monitoring accidents/incidents they will not be involved routinely unless a problem occurs. However, the expertise of the M&H team in ergonomics is invaluable, therefore the input of the team at the design stage, through to the commissioning of: - new builds, upgrades, refurbishments and changes of use should be automatic.

15. Referral to other specialist advisors

The MHP/BCA is unlikely to get involved unless there is a complex M&H problem, when consultation with other experts, such as PTs, OTs, TVNs and ICNs, may be necessary, using a team approach to problem-solving.

16. Transport – internal and external

When the patient is non-ambulant the following are required: -

- Wheelchairs with removable arms and footrests, some with elevating footrests
- Adjustable height trolleys/beds, in particular for the return from plaster room/theatre when the load will be more cumbersome and heavy due to the POP
- Sufficient staff will be necessary to manoeuvre the bed and ensure patient safety
- Walking patients may well have very limited movement and may require supervision when using walking aids
- Ambulances appropriate to the patient's condition

17. Discharge and transfer planning (see also section 8)

As the duration of wearing a cast differs individually the M & H tasks vary enormously, as it can take 10 days for a sprain to 6-8 weeks for a fractured femur (Lamb et al 2005). The following should be implemented: -

- The patient should be actively involved in any discharge planning

- Cast care instructions and precautions should be in writing as well as given verbally (RNOHb)
- If anyone, e.g. an adolescent, is going home with a corset, both patient and care giver must be taught how to apply/remove this and the importance of not staying in one position should be stressed
- Instructions on sitting down and standing up, getting in and out of cars, and managing stairs, with walking aids should be taught
- Advice as to how to get in and out of bed and bathing should be given
- As POPs and fiberglass casts must not get wet advice should be given on showering and bathing

Please also refer to the following standards: - G32 Discharges and transfers; and K1 Partnership working and K2 Discharges and transfers.

18. References

Health & Safety at work etc Act (1974) Ch 37, Sec 2(1)&(2), 7

HSE (2000) *L21 Management of health and safety at work Management of Health and Safety at Work Regulations 1999 ACOP and Guidance* Sudbury: HSE Books Regs 3-5, 10, 13, 14

HSE (2004) *L23 Manual handling Manual Handling Operations Regulations 1992 (as amended) Guidance on Regulations* 3rd edition Suffolk: HSE Books paras 48, 51, 53

Benner P (1984) *From novice to expert. Excellence and power in clinical nursing practice* Boston: Addison-Wesley pp 13-34 as cited in Ruszala S, Hall J and Alexander P (2010) in Standards in Manual Handling Towcester: NBE

Care Quality Commission (2010) *Essential Standards of Quality and Safety* www.cqc.org.uk/_db/_downloads/Essential_standards_of_quality_and_safety_March_2010 (Retrieved 18 September 2011 Outcomes 11 & 13)

D'Astous Jacques L, MD, FRCS(C); Sanders James O, MD (2007) *Casting and Traction Treatment Methods for Scoliosis:* Orthop Clin N Am 38 (2007) 477–484

Lamb SE, Nakash RA, Withers EJ, Clark M, Marsh JL, Wilson S, Hutton JL, Szczepura A, Dale JR, Cooke MW, and the Collaborative Ankle Support Trial research team (CAST) (2005) *Clinical and cost effectiveness of mechanical support for severe ankle sprains: design of a randomised controlled trial in the emergency department, Treatment Protocol* [ISRCTN 37807450] BMC Musculoskeletal Disord. 2005 Jan13; 6:1

Hignett S. and McAtamney L. (2000) *Rapid Entire Body Assessment (REBA)* Applied Ergonomics 31:201-205

Hignett S & McAtamney L (2006) *REBA and RULA Whole body and Upper Limb rapid assessment tools* in Karwowski W & Marras WS (Eds) the Occupational Ergonomics Handbook (2nd ed) Boca Raton FI CRC Press 42-1-42-12

National Patient Safety Agency NHS, (2008) *A Risk Matrix for Risk Managers* (Retrieved 18 02 13) from www.npsa.nhs.uk

(RNOHa) *Patient group visit to plaster theatre* http://www.rnoh.nhs.uk/sites/default/files/boardmeet/1103/_16__rnoh_patient_group_visit_report_to_plaster_theatre.pdf (Retrieved 21 10 12)

(RNOHb) *A Patient's Guide to Wearing a Plaster Jacket*, RNOH http://www.rnoh.nhs.uk/sites/default/files/downloads/10-156_rnoh_pg_plaster_jacket_web.pdf (Retrieved 21 10 12)

Summary/ Key Messages

- **The intention of the entire strategy and standards document is to contribute to the improvement of: -**
  - The quality of care - 'patient experience' (dignity, privacy and choice)
    - clinical outcomes
  - Patient/ person safety
  - Staff health, safety and wellbeing
  - Organisational performance – cost effectiveness and reputation, etc.

- **The standard for G11 is:**

Systems are in place to cover all reasonably foreseeable handling situations in the fracture clinic and plaster room/ theatre.

- **Skilful M&H is key**

- **Special points for G11 are: -**
  - **Patients are involved in their treatment and encouraged to move as independently as possible**
  - **When appropriate, family carers are also involved**
  - **Evidence of department-wide adoption of an ergonomics approach**
  - **The provision of suitable equipment and departmental layout is conducive to safe and efficient practice**