G10	Standard	Orthopaedics moving and handling (M&H)

Systems are in place to cover all reasonably foreseeable handling situations in managing **orthopaedic patients.**

Justification

Rationale

This group of patients may need specialist handling and this must be reflected in the provision of equipment and the competence of the staff.

Authorising Evidence

HSWA (1974); MHOR (2004 as amended); LOLER (1998); PUWER (1998); MHSWR (2000)

Links to other published standards & guidance

NPSA (2008); NPSA (2011); Ruszala et al (2010)

Cross reference to other standards in this document

A13; B7-9; C4,11,13; D1-11,13-16; F; G2-4,8,9,11,17,14-16,18,19,21-27,30,31,32,33,34,39,40; K1-3

Appendices

4, 9-10, 15, 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 unit, including pre- and post-operative procedures which may vary from surgeon to surgeon
- 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
- 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
- Where appropriate family carers are also involved

G10 Protocol – Orthopaedics (M&H)

Author: Amanda Evelyn

Other contributors: David Couzens-Howard; Joan Gabbett; Eila Mohey; Sandra O'Conner; Maggie Williams

1. Introduction and background

A Frenchman, Nicholas Andry, gave the word 'Orthopaedics' to this branch of medicine in a paper he published in 1741 (Crawford Adams, 1971). The word is derived from the Greek 'orthos' correct/ straight and 'paedeion' children Orthopaedics, as known today, is a development of the twentieth century. Prior to the twentieth century, treatment of such conditions would have been within the remit of the general surgeon (Roaf & Hodkinson, 1963). Since then it has come to be synonymous with skeletal and locomotor conditions, including congenital abnormalities and trauma, sports injuries, degenerative diseases, infections and tumours in people of all ages (Roaf & Hodkinson, 1963).

Most of the population will, at one time or another, incur an orthopaedic problem. For example, in the USA more than 10% of that country's adult population had clinical osteoarthritis in 2005 – the most common cause of disability in adults (Murphy & Helmick, 2012.) Arthritis and fractures have a significant impact on the individuals affected, which in turn imposes a great demand on health services. Added to such diseases are the various conditions that come under the umbrella of orthopaedics of congenital origin.

Whilst orthopaedics and orthopaedic surgery covers all bone and joint conditions and injuries, this protocol concentrates on hips and knees as it is these areas where post-operative routines can vary.

2. Management, organisation, supervision and support

It is essential that an orthopaedic unit is managed with an integrated approach, where clinical considerations are foremost. To achieve this, an appropriate management structure, and competent managers and supervisory staff are essential. It is very important that orthopaedic unit guidelines are drawn up and followed for all pre and post-operative moving and handling (M&H) care, e.g. fractures, partial and total joint replacements. In many units with a number of orthopaedic consultants it may be the case that their pre and post-operative routines are significantly different and staff must be aware of this and act accordingly. New and temporary staff will need to be informed of these differences, and where these are documented – electronically or in hard copy. Novices and Advanced Beginners will require supervision and support (see section 4).

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, be it for general care or hygiene purposes, repositioning or a transfer manoeuvre, as well as their predicted frequencies, and this too will inform the planning of staffing levels.

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

M&H will require various levels of competence. In some areas high levels (*Proficient or Expert*) will be required, because of the complexity and/or difficulty of the task, or the consequences of making a mistake, as for example in the case of patients with actual or suspected spinal injuries. Generally however the breakdown will be as follows: -

Novice:
New students, health care assistants or porters, and qualified staff with little or no experience of working in orthopaedic settings.

Advanced beginner:
Staff with some prior orthopaedic work experience. This category could include some students and staff new to the unit.

Competent:
Staff who have been working in orthopaedics for some time, who have been trained, supervised and assessed as competent and who can provide supervision to other staff.

Proficient:
Moving and handling link workers/ key workers/ champions who have received additional information, training, supervision and assessment, especially in the more complex situations. This category will include the unit's senior nursing and specialist AHP personnel.

If medical staff (senior or junior) are to undertake any patient handling tasks they must be assessed as to their competence in this regard. Anaesthetists will usually take the lead with intubated patients.

Visiting staff, including those attached to the unit, will need to have their M&H competence assessed. This group will include radiographers, theatre porters and ambulance staff.

M&H interventions must be in the control or supervision of staff who are at least competent. They are expected to take the lead. This is especially important where less experienced or visiting staff are involved.

There should be regular educational updates and assessment.

5. Environment

Space for safe practice is important, particularly, for example, in the case of hip replacements where the patient has to get out/ be got out of bed on the affected side, bariatric orthopaedic patients and spinal patients on special beds to accommodate their requirements. Space is also essential to allow for rehabilitation activities, especially walking, where it is frequently necessary to accommodate three people abreast. Dedicated storage facilities are vital for a range of M&H and therapeutic equipment. This is important if such items are not to be housed inappropriately, e.g. in bathrooms and corridors, affecting the efficiency and safety of the unit.

A range of seating heights (including toilets) is important in orthopaedics due to the need for hip replacements not to bend forwards beyond a 90^0 angle (see section 12).

6. Communication and information systems regarding initial referral and entry to the system.

The importance of advance information regarding the patient, whether in verbal or written form, should not be underestimated. This applies in the case of emergency admissions and elective referrals. At each stage of the 'patient journey', whatever the reason for and route of admission, advanced notification must be transmitted to the receiving department or unit. The patient's records/notes should accompany the patient and be readily accessible to the clinical staff (MHOR, 2004, para 130).

7. Treatment planning – goals etc.

At all stages of a patient's journey through the system, treatment must be planned by the multidisciplinary team and goals agreed with all concerned. The aim of all treatment planning should be the promotion of independence with a view to the best clinical outcome for discharge back home as soon as possible, within the bounds of safety. Clinical outcomes and patient satisfaction tend to be better when patients (and where appropriate their relatives and other informal carers) are involved in key decisions about treatment.

Many orthopaedic patients will find it safer and easier to shower rather than bathe.

Surgeons must take into account the M&H that will be required post-operatively.

<u>Elective surgery</u>
A pre-operative visit by the patient to the unit is desirable for teaching the use of crutches for walking, the management of crutches during sitting/ standing and using stairs for those who will be on crutches, particularly if non-weight bearing. Practising getting out of and into bed post hip replacement, knee replacement and spinal surgery should also be covered. These visits may need to be on-going until the patient is confident and competent.

Emergency trauma
Following the usual A&E policies, protocols and procedures should ensure a smooth admission or transfer.

As with all admissions, planning for discharge should commence at admission (see section 17).

8. Moving & handling tasks

The M&H tasks will depend on the patient's age, current diagnosis and any concomitant condition e.g. an elderly patient with a lateral malleolar fracture and a history of rheumatoid arthritis will have more complex handling issues than a teenager with the same injury. Planning of the unit's procedures and the journey for each individual patient, should take into account the tasks necessary to assess, investigate, diagnose, care for, treat, operate on, rehabilitate and transport this type of patient. This can vary greatly and range from a fractured spine with neurological involvement, requiring very specialised M&H, to an uncomplicated Colles' fracture in a younger person, requiring virtually none.

Tasks will include assisting the patient with: -

- In bed moves
- Into/out of bed
- Horizontal lateral transfers
- Seated transfers
- Sitting ← → standing
- Stepping, walking, stair climbing

Also: -

- Very many care tasks, where posture may be compromised
- Various inanimate load handling tasks

9. Moving & handling assessment

All M&H tasks must be assessed. This can be done generically in connection with integrated care pathways, or it may be done individually. The generic assessments need to be linked to a complete audit of the environment and equipment. Safe systems of work should be developed on the basis of the generic assessments, leading to the drawing-up of SOPs.

Patients should be assessed individually on admission and when any change occurs. Dynamic assessments are part of the process. It is also essential that tissue viability (TV) needs are assessed in conjunction with M&H. It is imperative that suitable and sufficient analgesia is given prior to assessing and encouraging a patient to move, in particular in the initial post-operative stage.

10. Methods, techniques and approaches

Evidence-based approaches should be used, following thorough assessment. These approaches need to be implemented and embedded, with the requisite equipment, training, supervision, etc. Procedures and protocols should: -

- identify hazards
- evaluate risks
- set goals
- describe in sufficient detail the precise methods
- indicate the number of handlers
- specify equipment
- point out special precautions
- give clear clinical reasoning

Although postoperative dislocations are rare if the components are correctly placed (Solomon et al, 2005), care must be taken that patients with a partial or total hip replacement are assisted out of bed on the operated side for a period of time depending on local practice and the consultant's instructions post-surgery. Generally there must be no forward flexion of more than 90^0 and no internal rotation or adduction past the mid-line, for at least the first 6 weeks and ideally 12 weeks, post-surgery (Coutts, 2005). In the case of anterolateral and true lateral incisions, excessive extension and external rotation is to be avoided for similar periods.

Spinal surgery patients must be taught the safest way to get up out of bed keeping the best possible spinal alignment.

Particular attention needs to be paid to patients in spicas/ with external fixation. It will be hard for the patient to manoeuvre, particularly immediately post operatively when s/he may be in discomfort or pain, as the external fixation is often cumbersome. One or more handlers will be required to deal with the patient in the spica/ external fixation, with one to manage the spica/ external fixation to prevent damage to the external fixation causing dislodgement of the fracture ends or damage to the skin of the unaffected limb.

The safe introduction and use of continuous passive movement machines, post knee surgery, must be taught.

Following shoulder surgery the patient will be unable to roll or sleep on the operated side. There will be issues for hygiene and dressing as the patient will be unable to wash under the axilla of the unaffected arm if the other one is fractured or dislocated, nor will the patient be able to abduct the shoulder of the affected side to wash unassisted.

11. Handling equipment

As with any work area, sufficient supplies of suitable handling equipment must be provided, according to the needs of the orthopaedic unit. Safe working loads (SWL) should be adequate for the anticipated patient group, including bariatric patients. Equipment may include: -

- Hoist, including a flat-lifter stretcher attachment

- Access to a flat-lifting system such as a HoverJack or scoop stretcher for use with a fallen patient (NPSA/2011/RRR001)
- Slide sheets/ roller sheet
- Abduction turning frame/ abduction wedge/ Immoturn
- Sliding board – bed length for lateral transfers/ lateral transfer system
- Small sliding boards for seated transfers
- Hand blocks
- Lifting pole – the SWL of most is 70kg – care must be taken to ensure this is not exceeded. These, if available, may be helpful for younger patients. They may not be helpful for older patients/ those with arthritic hands/ elbows/ shoulders
- Turning discs – floor standing and those with a vertical T-bar
- Walking frames
- Bariatric bed, chair and other handling equipment providing a higher SWL

Note: This is not an exhaustive list.

12. Other equipment and furniture

- Sufficient supplies of adjustable height equipment must also be provided, such as trolleys, beds, couches, commodes, walking aids, armchairs and specialist seating
- A range of seating heights is important in orthopaedics due to the need for hip replacements not to bend forwards beyond a 90^0 angle
- Toilets will require a range of seat raisers and grab rails
- Chairs of varying heights/ adjustable height, some with drop down arms for ease of transfers
- Beds – 4-section profiling to encourage movement and reduce the incidence of pressure ulcers
- Pressure relieving/reducing cushions for seating where this is not integral
- Standing beds/ tilt tables/ turning beds
- Sufficient wheelchairs including some with integral leg extensions

Note: This is not an exhaustive list.

13. Risk rating for each task

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.

The tasks involved in orthopaedics are many and varied and it is not possible to identify all the risk ratings involved at this point. Each task should be identified and assessed after which appropriate action must be taken to reduce any risk of injury to the lowest level reasonably practicable. To rate a particular task refer to the Moving and Handling Strategy document (2011) appendices 9 & 13 in CD1; or to Smith, J (ed) (2005) for more information. Similarly Smith J (ed) (2011).

The postural risks for staff in orthopaedics may be significant. For assessing postural risks and those associated with tasks other tools are available, such as RULA (Hignett S & McAtamney L, 2006), REBA (Hignett S & McAtamney L, 2000) and OWAS (Karhu et al, 1977). These not only look at postures but forces.

14. Alerting the moving and handling team

This may need to be done in the case of a

- bariatric admission
- spinal injury
- where equipment required is not available
- where staff need to be trained for special competencies
- any other problem that requires specialist M&H advice.

For elective surgery this should be prior to admission. For A&E admissions this should be on admission.

15. Referral to and involvement of other specialists

M&H advisors work as part of a MDT. From time to time they will need to involve other specialists such as: - tissue viability nurses and infection control nurses in joint assessments, problem-solving and care planning, where M&H is an issue.

The M&H advisor will often take the lead in seeking advice from centres of excellence (e.g. spinal units) and liaising with equipment companies.

The commonest referrals (usually by the ward staff) are to PTs for mobilising and checking patient safety with crutches and on stairs pre discharge, safe sit to stand and negotiating doorways, etc. Another common referral is to OTs for ADL practice.

It is sometimes necessary to carry out a home visit to ascertain chair and bed heights, toilet seat heights, whether grab rails are required etc.

16. Transport (internal and external)

Wheelchairs with integral leg extensions should be available when necessary.

When patients are moved on beds, the height should be adjusted to suit the handlers who are pushing, pulling and guiding it.
Extra care is required when pushing a bed with a patient on traction.

At least two staff are needed to push/ pull/ guide an occupied trolley/ bed, and for heavier patients more staff and/ or equipment may be required.

NOTE: For both the wheelchair and the bed/ trolley transfer, the environment including how the doors open/ stay open, and pushing and steering forces should be taken into account including either the use of equipment such as electric bed movers or extra staff.

17. Discharge and transfer planning

Planning should commence on admission. This helps to give time for the assessment, locating and funding of any equipment and environmental modifications that may be required, as well as giving a focus to rehabilitation.

Discharges and transfers should follow local hospital/ care home procedures, and should be applied from admission onwards. The patient's lifestyle for the immediate and foreseeable future may need to be considered (e.g. showering instead of bathing).

Patients should not be discharged home or to another care facility until relevant equipment such as raised toilet seats, chair raisers, shower seats, long handled shoe horn, sock aids and long arms or other equipment needed for safe practice have been supplied. Similarly, the patient should not be discharged home until the care givers/ parents have been taught how to instruct/ assist/ supervise.

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

18. References

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

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

Coutts F (2005) *Total joint replacements* in Atkinson K, Coutts F and Hassenkamp A-M *Physiotherapy in Orthopaedics: a problem solving approach* (2005) Elsevier Churchill Livingstone London pp241, 247-9

Crawford Adams (1971) *Outline of Orthopaedics 7th Ed* Churchill Livingstone London: Introduction p1

CQC Care Quality Commission (2010) *Essential Standards of Quality and Safety (2010) Outcome 13.*
Guidance found in
http://www.cqc.org.uk/_db/_documents/Essential_standards_of_quality_and_safety_FINAL_081209.pdf (retrieved 22/10/2012)

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

Karhu O, Kansi P, Kuorinka I (1977) *Ovako Working-posture Analysis System* in Applied Ergonomics Vol 8 Issue 4 p199-201

Murphy L and Helmick C (2012) *The impact of osteoarthritis in the United States: A population health perspective: A population based review of the fourth most common cause of hospitalisation in US adults* Orthopaedic Nursing March/April 2012 Vol 31 Issue 2 p85-91
http://journals.lww.com/orthopaedicnursing/Abstract/2012/03000/The_Impact_of_Osteoarthritis_in_the_United_States_.6.aspx Retrieved 22/10/2012

NPSA National Patient Safety Agency (2008) *A risk Matrix for Risk Managers* www.npsa.nhs.uk Retrieved 17.08.11

NPSA (2011) *Rapid response report NPSA/2011/RRR001 Essential care after an inpatient fall –supporting information*
http://www.nrls.npsa.nhs..uk Retrieved 22/10/2012

Roaf R and Hodkinson L (eds) (1963) *The Oswestry Textbook for Orthopaedic Nurses* London: Pitman Medical

Smith, J (ed) (2005) *The guide to the Handling of People* 5th Ed Appendix 1 & 2 and the practical chapters for more information.

Smith J (ed) (2011) *The guide to the Handling of People a systems approach* 6th Ed Appendix 3.1, the relevant chapter evidence reviews.

Solomon, L; Warwich, D; Nayagam, S (2005) *Apley's Concise System of Orthopaedics and Fractures* 3rd Ed London: Hodder Arnold p130

Further Reading

Benz, J (1986) *The Adolescent in a Plaster Cast* Orthopaedic Nursing May/June 1986 Vol 5 Issue 3
http://journals.lww.com/orthopaedicnursing/Abstract/1986/05000/The_Adolescent_in_a_Spica_Cast.6.aspx Retrieved 22/10/2012

Brooks A and Orchard S (2011) *The guide to the handling of people a systems approach 6th ed* Smith J ed Teddington: BackCare Ch 10

Erlen J (2001) *The nursing shortage: patient care and ethics* Othopaedic Nursing November/December 2001 Vol 20 Issue 6 p 61-5 http://journals.lww.com/orthopaedicnursing/Abstract/2001/11000/The_Nursing_Shortage,_Patient_Care,_and_Ethics.13.aspx Retrieved 22/10/2012

HSC (1998) *L22 Safe use of work equipment Provision and Use of Work Equipment Regulations 1998 ACOP and guidance* Reg 4(2), Norwich: HSE Books Retrieved 15 April 2011; para 92(b), 100, 105 & 6

HSC (1998) *L113 Safe use of Lifting Equipment Lifting Operations and Lifting Equipment Regulations 1998 ACOP and guidance* Reg 3, Norwich: HSE Books; Paras 51, 305

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

Reed C; Caroll L; Baccari S; Shermont H (2011) *Spica Cast Care: A collaborative staff-led education initiative for improved patient care* Othopaedic Nursing November/December 2011 Vol 30 Issue 6 p353-358 http://journals.lww.com/orthopaedicnursing/Abstract/2011/11000/Spica_Cast_Care__A_Collaborative_Staff_Led.3.aspx Retrieved 22/10/2012

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 G10 is:**

Systems are in place to cover all reasonably foreseeable handling situations in managing orthopaedic patients

- **Skilful M&H is key**

- **Special points for G10 are: -**

  - **Agreed approaches, informed by evidence-based best practice, documented in unit M&H policy, are disseminated to all staff and embedded within the unit**
  - **Generic assessments are carried out and developed into SOPs, with PIPs carried out on those patients requiring, including for pre and post-operative routines**
  - **Staff follow the protocols and procedures, and understand the clinical reasoning behind them**