Worcestershire Acute Hospitals NHS Trust

Trauma and Orthopaedic / Emergency Department

PERFORMING A LOG ROLL

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

This guideline is for use by the following staff groups :

All registered nurses, medical staff and associated staff who have received or will be receiving appropriate training in the log roll procedure.

1. Competencies Required

As well as being familiar with the content of this document, all medical staff / registered nurses and associated staff who might be required to look after patients with spinal injuries, should receive appropriate practical training in performing the log roll procedure.

2. Inclusion Criteria

All patients who require spinal immobilisation are covered by this guideline.

Lead Clinician(s)

Created by:

Corinna Winkworth	Surgical Care Practitioner Trauma & Orthopaedics
Dr Nick Turley	ED Consultant
Guideline reviewed and approved on by Trauma and Orthopaedic Clinical Governance Meeting:	17th April 2024
Review Date: This is the most current document and is to be used until a revised version is available	17th April 2027

Worcestershire Acute Hospitals NHS Trust

Key amendments to this guideline

Date	Amendment	Approved by:
7th July 2021	New document approved	Trauma and Orthopaedic Clinical Governance Meeting
17.04.2024	Document reapproved	Trauma and Orthopaedic Clinical Governance Meeting

Contents

3. Introduction

Many patients involved in a traumatic event may arrive in hospital, where the possibility of spinal injury needs to be considered. This may include patients involved in road traffic collisions, falls, penetrating injuries such as gunshots or stab wounds, sports related injuries, blunt trauma to the head and neck and diving injuries. It is presumed that the possibility of a spinal injury is present until proven otherwise by careful clinical examination and or radiographic assessment such as X-ray, CT or MRI scan. Other patients with possible unstable spinal conditions, such as malignant spinal cord compression, will also require the same precautions with moving and handling.

When caring for a patient with a suspected or confirmed spinal injury, the patient should be moved as little as possible. However, there are key aspects of care that still need to be delivered such as comprehensive examination, transfer for scans, transfer between beds, pressure area care, washing and toileting. In order to do this safely a procedure known as a 'log roll' is used to move the patient in a careful, co-ordinated way that aims to maintain vertebral column alignment and minimise spinal movement

4. Aims

1. To ensure the procedure is carried out safely and correctly.

2. To maintain vertebral column alignment and immobilisation at all times

3. To prevent further discomfort to the patient at all times.

5. Guideline for Performing a Log Roll

5.1 PLANNING

1. Any immobilised patient should be monitored closely in case of potential airway occlusion. This could be from vomit or blood from facial wounds for example. Where possible, a nurse should accompany the patient for any transfer to other areas whilst immobilisation continues to be required. Suction should always be available in the bed space, along with a nurse call bell within the patient's reach if able to use one.
   Planning the procedure aims to ensure the patient is as safe and comfortable as possible, all high priority tasks have been completed and the patient and team members are fully informed about what is to happen

Action	Rationale
1. If relevant, complete primary survey of trauma patients.	Following ATLS Guidelines (2018)
2. Ensure adequate analgesia and anti-emetic has been given to the patient prior to the procedure.	To maintain patient comfort
3. Check patient for any sensory and motor loss prior to log roll. e.g. pins and needles, paralysis. If any neurological symptoms or signs are discovered these should be communicated to the medical staff and documented in the patient's record on an ASIA chart.	To enable comparison of symptoms and neurological signs following log roll and over the course of the patient's admission and recovery.
4. Ensure the patient understands the procedure	To reassure the patient, and to gain their trust and co-operation with the procedure.
5. Confirm if any painful injuries e.g. fractures to arms, legs, or chest injuries.	Always roll onto the **unaffected** side. This should prevent further discomfort for the patient.

5.2 Resources Required

Five people are required to log roll most adult patients. Less people may be required for children or smaller adults as long as adequate alignment and immobilisation can be maintained.

Positions of the team members are shown below.

4 team members are required to perform the roll itself with a 5th member to perform any examination or tasks.

A rigid c-spine collar, blocks and tape may be required to reinstate triple immobilisation of the patient's c-spine after rolling, if indicated. If there is any doubt about what immobilisation measures are required, please clarify with a senior member of the clinical team responsible for the patient's care.

In situations where it has been **confirmed** that there is **no** cervical spine injury, no c-spine immobilisation is required. However, if injury to the thoracic or lumbar spine is still suspected, spinal alignment should still be maintained which still includes supporting the head and c-spine during the log-roll. This can be achieved via a well-placed pillow to reduce the number of staff required. In this case, the team leader can take up another position from which to lead the log-roll.

5.3 Performing The Log-Roll

The team leader will support the head and neck and instruct the rest of the team with regards to correct positioning, hand placement, when to roll and how much to roll.

The principle of moving the patient as little as possible should be remembered. Where possible a 'modified tilt' log roll should be performed. This involves only turning the patient to 20 degrees rather than rolling them fully onto their side. This will prevent excessive movement of an injured spine but also of other injured body parts, such as the pelvis, where movement could cause pain or provoke internal bleeding. This modified tilt should provide enough space and visibility to complete most brief tasks such as examination, removal of clothing and changing of bedding.

Holding the modified tilt position can be challenging so for prolonged tasks or procedures, a full roll may be necessary to ensure comfort of the patient and the team.

In order to maintain excellent spinal alignment, the team must work as a co-ordinated, controlled unit with smooth, slow movement of the patient.

Action	Rationale
1. A team leader should be chosen from the team. This should be someone who is trained and confident in this procedure.	To control the procedure and maintain head an cervical immobilisation. The team leader will control the whole procedure using verbal commands.
2. The team leader should approach the patient and explain the procedure.	To reassure, gain co-operation and get the patient in a good position for rolling.
3. Ensure any restricting straps are removed. Ask the patient to cross their arms across their chest if able.	To free the patient from any restricting straps from a spinal board or scoop in order to facilitate the roll.
4. Adjust the height of the bed to ensure all team members will be able to support the patient without excessive bending or strain on their backs.	To ensure team comfort and optimise their ability to perform the procedure safely and effectively.
5. The team leader should stand at the head and instruct the removal of the head straps and blocks whilst providing manual in-line stabilisation of the head and neck with both hands. **DO NOT** remove the cervical collar if one is in place unless it is established the collar is not required or is causing harm to the patient by remaining in place. There are several ways to support the patient's head and neck. The most important principle here is to ensure this is done in a way that reliably maintains spinal alignment but is also comfortable for the patient and the staff member.	To take control of the head and neck, facilitate the roll and prevent further injury.
6. The team leader should now instruct the other three members of the team in their correct positions.	To facilitate the roll.
7. The three assistants should be positioned in height order. The tallest at the patients shoulder, with the smallest positioned at the feet.	To safely complete the roll maintaining spinal alignment at all times.

Position One
The assistant should be level with the patient's chest with one hand going over the arm and chest resting on the shoulder and the other hand resting on the patient's upper pelvis.

Position Two
The assistant should be level with the patient's hip. One hand should be placed over the side of the lower pelvis or hip. The other hand under the inside of the thigh, above the knee, of the leg positioned furthest from the assistant. There is no need for the team members in position one and position two to cross arms.

Position Three
The assistant should be level with the patients legs with both hands under the lower leg positioned furthest from the assistant. The leg should not be allowed to drop down towards the bed.

Please note the patient will always be rolled towards the three assistants

Action
8. Once in a satisfactory position the team leader will discuss how far to roll the patient e.g. "we will roll to 20 degrees" for a modified tilt manoeuvre or "we will roll to 90 degrees" for a full logroll. The team leader will also establish when the roll movement will start and stop. E.g. "I will use the instruction 'Ready, Steady, Roll' Stop!'"

Rationale
To facilitate co-ordinated movement as a team with full control.

9.	The team leader gives the agreed instruction and the patient is steadily tilted onto their side to the required amount.	To allow examination of the spine, or completion of any tasks such as the removal of spinal board, bedding, clothing etc.
10.	Once the required tasks / examinations are completed the team leader will give clear instructions to the team on when to roll the patient back. e.g. “we will roll back on ‘Ready, Steady, Roll”.	To maintain the line of immobilisation and perform a co-ordinated controlled return of the patient to resting position.
11.	Once the patient is returned to their original position, the team leader will discharge the team controlling the trunk, at the same time maintaining immobilisation of the head and neck if required. If necessary the team leader must continue immobilisation until any necessary immobilisation (collar, blocks, tape) is back in place.	To maintain cervical and head immobilisation until careful medical examination determines no cervical spine damage.
12.	Reassess patient for any new sensory or motor loss.	To detect any possible deterioration in condition.
13.	On completion of the procedure ensure the patient is comfortable and fully understands what is to happen next.	To reassure patient.
14.	Document procedure in notes	Maintain documentation.

6. Potential Problems

Problem	Rationale
1. Staff not trained in log roll procedures	Procedure should not take place if all staff taking part are not fully trained. Incorrectly moving a patient may result in potential permanent spinal injury.
2. Patient non-compliant	Seek immediate medical advice.

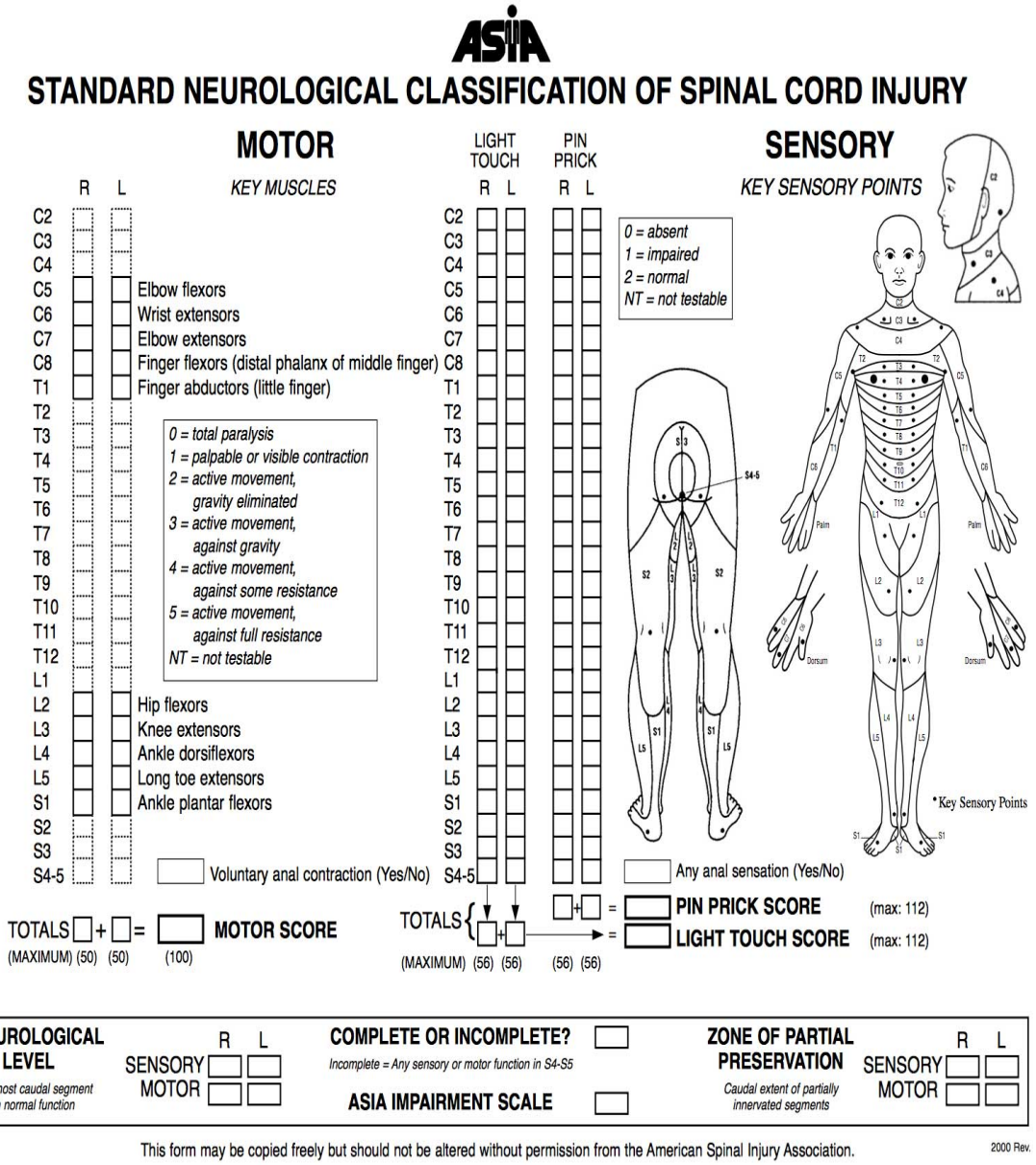
7. Log Roll Technique:

Hand Positions

Full Log Roll

Modified Tilt

8: Asia Chart


STANDARD NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY
MOTOR
KEY MUSCLES
R L
C2
C3
C4
C5 Elbow flexors
C6 Wrist extensors
C7 Elbow extensors
C8 Finger flexors (distal phalanx of middle finger)
T1 Finger abductors (little finger)
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
L1
L2 Hip flexors
L3 Knee extensors
L4 Ankle dorsiflexors
L5 Long toe extensors
S1 Ankle plantar flexors
S2
S3
S4-5 Voluntary anal contraction (Yes/No)
0 = total paralysis
1 = palpable or visible contraction
2 = active movement, gravity eliminated
3 = active movement, against gravity
4 = active movement, against some resistance
5 = active movement, against full resistance
NT = not testable
TOTALS + = MOTOR SCORE
(MAXIMUM) (50) (50) (100)
LIGHT TOUCH
PIN PRICK
R L R L
TOTALS + = PIN PRICK SCORE (max: 112)
= LIGHT TOUCH SCORE (max: 112)
(MAXIMUM) (56) (56) (56) (56)
SENSORY
KEY SENSORY POINTS
0 = absent
1 = impaired
2 = normal
NT = not testable
Any anal sensation (Yes/No)
Key Sensory Points
NEUROLOGICAL LEVEL
The most caudal segment with normal function
SENSORY
MOTOR
COMPLETE OR INCOMPLETE?
Incomplete = Any sensory or motor function in S4-S5
ASIA IMPAIRMENT SCALE
ZONE OF PARTIAL PRESERVATION
Caudal extent of partially innervated segments
This form may be copied freely but should not be altered without permission from the American Spinal Injury Association.
2000 Rev.

9. Monitoring

GUIDELINE

This guideline focuses on the management of patients who present with suspected spinal injury

When will monitoring be carried out?	Assign audit to Directorate audit projects
Who will monitor compliance with the Guideline?	Clinical Lead for Trauma and Orthopaedics / Emergency Department

Standards:

Item	%	Exceptions
All patients to be prepared as per the guideline	100	None
All patients to be logrolled following the guideline	100	None
Correct documentation using Asia observation chart will be completed for all patients who meet inclusion criteria	100	None
Monitoring will be carried out by audit	100	None

10. References

Advanced Trauma Life Support for Doctors. ATLS Student Course Manual. Tenth Edition 2018

11. Contribution List

Key individuals involved in creating this guideline

Name	Designation
Corinna Winkworth	Surgical Care Practitioner T & O
Dr Nick Turley	Emergency Department Consultant

Circulated to the following individuals for comments

Name	Designation
Mr N Aslam	T&O Consultant
Mr P Craig	T&O Consultant
Mr C Docker	Clinical Director
Mr I Fathalla	T&O Consultant
Mr A Guha	T&O Consultant
Mr S Isaac	T&O Consultant
Mr D Knox	T&O Consultant
Mr R Kugan	T&O Consultant
Mr A Liu	T&O Associate Specialist
Mr J Luscombe	T&O Consultant
Mr T Mahmood	T&O Associate Specialist
Mr K Mathur	T&O Consultant
Mr D Mckenna	T&O Consultant
Mr A Mehra	T&O Consultant
Mr A Munjal	T&O Consultant
Mr A Pearse	T&O Consultant
Mr P Ratcliffe	T&O Consultant
Mr S Sadiq	T&O Consultant
Mr M Shahid	T&O Consultant
Mr G Simon	T&O Consultant
Mr M Pereira	T&O Consultant

Circulated to the following CD's/Heads of dept for comments from their directorates / departments

Name	Directorate / Department
Mr C Docker	T&O Clinical Director
Paula Gardner	Chief Nursing Officer
Alison Robinson	Divisional Director of Nursing for Surgery
Clare Bush	Divisional Director of Nursing for urgent Care
Stephen Goodyear	Divisional Director for Surgery
Dr Jules Walton	ED Divisional Medical Director
Dr Ian Levett	ED Governance Lead
Tracey Dennehy	T&O Lead Practitioner
Donna Jeynes	Acting Matron ED Department
Reena Rane	Matron T&O Alexandra

Amy Read	Matron T&O Worcester
Susan Blackburn	Ward Manager
Karen McDonnell	Ward Manager
Karen Apps	Clinical Governance
Susan Aston	Clinical Governance

Circulated to the chair of the following committee's / groups for comments

Name	Committee / group
	T &O Directorate Governance Committee
	ED Directorate Governance Committee

12. 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;

Worcestershire Acute Hospitals NHS Trust

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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	✓	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	Corinna Winkworth

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Corinna Winkworth	Surgical Care Practitioner T&O	Corinna.winkworth@nhs.net
Date assessment completed	**17/06/2021**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title:** **Trauma and Orthopaedic / Emergency Department PERFORMING A LOG ROLL**			
What is the aim, purpose and/or intended outcomes of this Activity?	To safely perform a logroll			
Who will be affected by the development & implementation of this activity?	☐ ☑ ❑ ❑	Service User Patient Carers Visitors	☑ ❑ ❑ ❑	Staff Communities Other _____
Is this:	✓	Review of an existing activity		

	❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?
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.	Peer Consensus. Updated Literature review
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	Circulated to wider group for comments
Summary of relevant findings	Comments received from peer consensus were actioned

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 positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		✓		The guideline takes age in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Disability		✓		The guideline takes disability in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Gender Reassignment		✓		The guideline takes gender reassignment in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Marriage & Civil Partnerships		✓		The guideline takes marriage and civil partnerships in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Pregnancy & Maternity		✓		The guideline takes pregnancy and maternity in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Race including Traveling Communities		✓		The guideline takes Race including traveling communities in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Religion & Belief		✓		The guideline takes Religion and Belief in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Sex		✓		The guideline takes sex in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Sexual Orientation		✓		The guideline takes sexual orientation in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)		✓		The guideline takes other vulnerable and disadvantaged groups in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury
Health Inequalities (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)		✓		The guideline takes health inequalities in to account. The guideline is for all medical staff / practitioners who have been trained appropriately to assess patients presenting with spinal injury

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
	Lack of assessed Competency sheet for staff	Add to Divisional risk register	T&O / ED Governance Lead	Ongoing
How will you monitor these actions?	Reflective audit of practice			
When will you review this EIA? (e.g in a service redesign, this	**Next review of guideline June 2024**			

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.

Signature of person completing EIA	Corinna Winkworth
Date signed	17/06/2021
Comments:	
Signature of person the Leader Person for this activity	Corinna Winkworth
Date signed	17/06/2021
Comments:	

13. 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 Training can be during shift patterns
	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.