QUALITY & PATIENT SAFETY AUDIT
FINAL AUDIT REPORT – EXECUTIVE SUMMARY

Audit Title:	Audit on Compliance with National Thrombolysis Guidelines for Cerebral Infarction		
Audit Number:	QPSA 001/2012		
Audit Requester:	Prof. Joseph Harbison, Joint National Clinical Lead in Stroke		
Audit Team Members:	1) Denise McArdle		
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Audit Sponsor:	Ms. Edwina Dunne – Director of Quality & Patient Safety Audit		
Source of Evidence	**Type**	**Location**	**Date**
	Survey Monkey Online Questionnaire	Lead clinicians acute hospitals	5 April 2012
	Site Visit	St James Hospital	19 April 2012
	Site Visit	Waterford Regional Hospital	26 April 2012
	Site Visit	Our Lady of Lourdes Hospital, Drogheda	1 May 2012
	Site Visit	Sligo General Hospital	9 May 2012
	Site Visit	Mid-Western Regional Hospital, Dooradoyle, Limerick	16 May 2012
	Site Visit	MRH Mullingar	17 May 2012
Date of Issue of Final Report:	11 July 2012		

1. BACKGROUND / RATIONALE

Stroke is a devastating condition that affects over 10,000 people every year in Ireland. Today, stroke is the third leading cause of death and the single most common cause of severe adult disability. The incidence of stroke in Ireland is increasing and if current trends are to continue this will lead to a 50% increase in stroke incidence over the next ten years (Health Service Executive (HSE) 2010). In 2008 the Irish Heart Foundation (IHF) conducted a National Audit of Stroke Care, which concluded that stroke services in Ireland were poorly organised and largely ineffective (Irish Heart Foundation 2008). Following on from this report the Stroke Council of the IHF published the National Clinical Guidelines for the Care of People with Stroke and Transient Ischaemic Attack in October 2009 (revised in March 2010). The National Thrombolysis Guidelines for Cerebral Infarction (Appendix B) are contained within these guidelines.

The HSE and the Royal College of Physicians of Ireland (RCPI) have identified the need to improve public awareness of stroke and aim to increase thrombolysis rates to between 5 – 10%. They also sought to develop services that deliver high quality acute care, including thrombolysis and the implementation of the National Stroke Clinical Care Programme. One of the main aims of the Stroke Programme is to have rapid

access to the best quality stroke services nationwide through the introduction of a national stroke thrombolysis service. By mid 2012, HSE acute hospitals will have operational stroke units to ensure that patients receive specialist stroke care from a multi-disciplinary team. There is also extensive work underway to ensure all patients admitted with stroke will have access to thrombolysis on a 24 hour basis regardless of where they are admitted (HSE 2011). Hospitals will use the Hospital Inpatient Enquiry (HIPE) system and the HIPE portal to collect a minimum data set in order to measure the effectiveness of the implementation of the stroke programme. It is planned that 80% of hospitals will have the HIPE portal operational by the end of quarter three 2012.

The rationale for this audit is to seek evidence to provide assurance that thrombolysis is being administered by appropriately trained staff in a safe manner and is compliant with the National Thrombolysis Guidelines for Cerebral Infarction.

2. AUDIT OBJECTIVES

The objectives of this audit are to:

- Determine whether the thrombolysis medication is being given appropriately according to National Thrombolysis Guidelines for Cerebral Infarction.
- Determine that the medication is being administered to appropriate patients within the four and a half hour timeframe.
- Determine whether thrombolysis is calculated, prescribed and administered correctly.
- Determine whether staff have received adequate training for the clinical procedure.
- Determine if all stroke patients admitted are receiving the appropriate treatment
- Establish if there were any complications for the patients post administration of thrombolysis medication, i.e. haemorrhage.
- Determine the standard of record keeping on patients receiving treatment: – this will include reviewing completion in relation to:
    - Exclusion Criteria for administration of thrombolysis therapy
    - National Institutes of Health Stroke Scale (NIHSS)[1]
    - Modified Rankin Scale[2]
    - Vital signs
    - Grade of doctor who was treating the patient (to include reviewing of CT scan, calculation of dosage and administration of the thrombolytic therapy through to 24 hours post thrombolysis.

In order to measure these objectives, the scope of this audit extends to the following HSE hospitals (these hospitals were randomly chosen by the audit team as they provided a good geographical representation:

- St James Hospital, Dublin (SJH)
- Waterford Regional Hospital (WRH)
- Our Lady of Lourdes Hospital, Drogheda (OLOL)
- Sligo General Hospital (SGH)
- Mid-Western Regional Hospital, Dooradoyle, Limerick (MWRH)
- Midland Regional Hospital, Mullingar (MRHM).

[1] The National Institute of Health Stroke Scale (NIHSS) is a systematic assessment tool that provides a quantitative measure of stroke related neurological deficit.
[2] Modified RANKIN scale is a commonly used scale for measuring the degree of disability or dependence in the daily activities of people who have suffered a stroke.

3. SIGNIFICANT FINDINGS

Following the site visits the audit team found that all patients bar one were thrombolysed within the four and a half hour time frame from the onset of symptoms to the administration of the thrombolytic agent Recumbent Tissue Plasminogen Activator (rt-PA).

There was extensive variation in the numbers thrombolysed nationally in the various hospitals. Thrombolysis rates ranged from 1% to 21%. This variation suggests that hospitals must review healthcare records of patients admitted with symptoms of stroke to ensure that all patients who were eligible for thrombolysis received it.

The team found an inconsistent approach to local thrombolysis audit nationally. Just 27% of hospitals have undertaken audit. Annual audits at each hospital would establish that all patients who presented with symptoms of stroke and who were eligible for thrombolysis received it.

The standards of documentation in the patient healthcare records varied considerably. Overall, medical documentation was of a poor standard. Instances of poor documentation standards were evident at many of the sites audited. In many instances, comprehensive nursing notes were used to source the data required as the medical documentation was illegible in places and not always dated and signed by the doctor. In some instances, the lack of supporting documentation led to dependence on verbal confirmation by the lead clinician to determine compliance and to ensure accuracy of the data collected.

One hospital used a brightly coloured easily identifiable comprehensive thrombolysis pathway / booklet to record the care of the patient. The audit team found this assisted in easy identification of the patient's treatment record and facilitated consistency regarding the patient assessment and treatment. This is recognised as good practice and one that could be adopted by other hospitals. There needs to be agreement at a national level to the roll out of a standardised thrombolysis pathway / booklet so as to ensure consistency in care and documentation.

The patient weight is an important variable when calculating the dose of rt-PA that is to be administered to the patient. The audit team found that for the most part almost all patient weights were estimated when they present to the emergency department (ED) with symptoms of an acute ischaemic stroke. It was not always documented in the healthcare records if the weight was estimated or actual.

The audit team found a variation in the levels and type of training by doctors who are eligible to prescribe and administer rt-PA. The audit team did find that some structured training is taking place nationally. Training continues to be provided by the Royal College of Physicians of Ireland (RCPI) and at local level. There are now significant numbers of appropriately trained and experienced senior staff at regional level. The data collated suggests that hospitals are carrying out in-house training for staff. Clarification needs to occur nationally on what training needs to be completed to ensure staff are competent to thrombolyse patients. This should include some form of certification of attendance at training. A large proportion of staff had completed NIHSS training. Some hospitals had both nursing and medical staff trained while most hospitals had medical staff who had undertaken the training. The audit team noted that training is not recorded in a systematic standardised manner.

The use of the SAP[3] training and education (T&E) module to record training (NIHSS etc) would be useful locally to identify rotating medical staff who are in compliance with training requirements for thrombolysis. It would be of further use when these staff move to other hospitals. By recording training activity, a robust risk control measure will be in place that can provide confidence (based on evidence) that staff have attended training appropriate to their position.

The audit team found that for the most part patients were continuously monitored as per the guidelines. Considerable variation was noted in the recording of the NIHSS and modified Rankin scale 24 hours post administration of rt-PA and would suggest that this be addressed.

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[3] SAP: Systems, Applications and Products in Data Processing Training and Events module (SAP T&E) data collection tool to record the training activity of staff in the HSE.

4. RECOMMENDATIONS

1. Nationally, there needs to be agreement and roll out of a standardised thrombolysis stroke care booklet. This should include a clear, concise pathway and checklist that complies with the National Thrombolysis Guidelines. The introduction of this booklet would facilitate consistency with regard to patient assessment and treatment.
2. MRHM and SJH need to improve overall medical record keeping and documentation standards. Medical staff should familiarise themselves with the HSE Standards and Recommended Practices for Healthcare Records published in 2011. Records management state that at a minimum as per section 2.4.16:
    - All entries should be in black ink
    - Dated and timed using the 24 hour clock
    - Signed with a clear signature, printed name, job title and bleep / identification number where relevant.
3. Locally, while awaiting the agreement of the standardised booklet, hospitals should consider colour coding their booklet as practiced in OLOL so it is easily identifiable. This booklet could then be referenced by the multi-disciplinary team.
4. Patient weights must always be documented within the healthcare records and this must note whether the weight is estimated or actual.
5. All staff need to be made aware of the importance of documenting clear timelines. These time lines include:
    - Onset of symptoms
    - Time of admission
    - Time of administration of rt-PA.
6. Mandatory NIHSS training should be prioritised and made available to relevant medical and nursing staff.
7. A national standardised training pack needs to be agreed upon so that a training, education and professional development programme can be delivered regionally in a consistent manner. This training must be delivered to medical registrar grades and above who are likely to be employed in hospitals designated for thrombolysis.
8. All training activity must be recorded. The use of HSE SAP system to record the training activity of staff will provide reliable data on training and provide confidence with evidence that training requirements are being fulfilled. It is logical to propose the SAP system as it is already in use by many of the HSE training functions and performance and development units.
9. A decision on the inclusion of the ROSIER should be discussed at national level when deciding the content of a standardised thrombolysis stroke care booklet.
10. Hospitals must commence annual audit of all patients who present with symptoms of stroke to ensure that no patients were missed for thrombolysis.
11. Regular audit of medical documentation within patient healthcare records to begin with immediate effect at sites where documentation was found to be of a poor standard.

5. CONCLUSION

The audit team can conclude that it is evident from the hospitals audited that there is a strong culture of patient safety and that staff are committed to the implementation of the National Thrombolysis Guidelines. Evidence suggests that staff are committed to the delivery of a safe and effective thrombolysis service for all patients who require it.

Not withstanding the above, there is room for improvement with regard to the documentation of care of the thrombolysed stroke patient within healthcare records. This can easily be addressed with a national standardised thrombolysis pathway / booklet and familiarisation by medical staff with section 2.4.16 of the HSE Standards and Recommended Practices for Healthcare records.

6. ACKNOWLEDGEMENT

The audit team wish to acknowledge the cooperation and goodwill afforded them by all persons who participated in the audit. The team also wish to acknowledge the expert advice afforded them by Professor Joseph Harbison.