Health and Social Care Board

Public Health Agency

SAFETY AND QUALITY LEARNING LETTER

Subject	**Head Injury in Patients on Warfarin – Treat as a Medical Emergency**
HSCB reference number	**LL/SAI/2014/025 (AS)**
Programme of care	**Acute**

LEARNING SOURCE			
SAI/Early Alert/Adverse incident	√	Complaint	
Audit or other review		Coroner's inquest	
Other (Please specify)			

SUMMARY OF EVENT

An elderly patient was brought by Ambulance to an Emergency Department (ED) following a suspected fall/collapse. Ambulance staff noted the patient to be confused and unable to remember the fall. At ED Triage, a head injury was noted and the patient confirmed that they were taking warfarin. The patient was triaged as Category 3 which meant they should have had a medical assessment within 1 hour. The waiting time for Category 3 patients at the time was over 3 hours. Neurological observations were started 2-hourly. The patient was seen by a doctor almost 4 hours after arriving at the ED. The doctor ordered a CT scan which was done within 30 minutes and verbally reported as showing a subdural haemorrhage. Prothrombin Complex Concentrate (PCC) was ordered (by then 5 hours after the patient arrived in ED), but not administered until almost 2 hours later ie almost 7 hours after the patient arrived in ED. The frequency of neurological observations was not increased to the recommended 'every 15 minutes'. A repeat CT scan showed a dramatic increase in the subdural haemorrhage and midline shift; palliative care was given and the patient subsequently died.

There have been similar circumstances in a second recent SAI. An elderly patient was brought by Ambulance to ED following a fall and with a visible head injury. Triage staff did not use the Trust's head injury proforma and therefore did not identify that the patient was on warfarin. The patient was triaged as Category 4; they had a medical assessment almost 4 hours later and at that point, noted to be on warfarin. A CT scan was ordered but not performed until 1.5 hours later. PCC was ordered when the CT scan showed a subdural haematoma but not administered for a further 45 minutes and therefore almost 8 hours after the patient first presented to ED. The patient subsequently deteriorated and died.

Head injury in patients on warfarin has a significant mortality rate, but patient outcomes are improved when warfarin is reversed quickly. In these cases there were a number of factors which contributed to the delays in administration of Prothrombin Complex Concentrate (PCC):

- There was no advance warning to ED staff that a patient with a head injury and on warfarin was being brought to ED. ED staff therefore did not have an opportunity to prepare for immediate medical assessment of the patient;
- The NI Electronic Care Record (NIECR) was not used to check the patient's medications and staff were therefore unaware that the patient was on warfarin;
- Head injury in patients on warfarin was not recognised as a medical emergency and patients were therefore not fast-tracked for assessment and treatment;
- In both cases, PCC was given after the CT scan rather than in advance on a precautionary basis despite signs of possible intracranial bleeding;

- PCC was not stored in the ED so immediate administration of PCC was not possible;
- ED escalation plans did not maintain the ED waiting time for Category 3 & 4 patients within the College of Emergency standards, so the patients' assessment by a doctor was delayed by 3-4 hours. This suggests that the ED Escalation Plan was not adequate or was not activated sufficiently.

TRANSFERABLE LEARNING

In Summary for All Staff

- Treat head injury in patients on warfarin as a medical emergency.

For NI Ambulance Staff

- It is your responsibility to be aware of and follow the NIAS protocol for managing head injury, including patients on warfarin.

For NI Ambulance Service Clinical and Management Leads

- Head injury protocols for emergency ambulance personnel should include a requirement for staff to:
  - Ask patients who present with a head injury if they are on warfarin;
  - Contact the receiving ED to let them know that the patient has a head injury and is on warfarin. They should specifically give details which might indicate intracranial bleeding – facial or scalp laceration or bruising or persistent headache or loss of consciousness or amnesia or a reduced Glasgow Coma Scale (GCS);
  - Remind ED staff on arrival that the patient is on warfarin.

For all GPs, and Clinical and Management Leads in GP Out-of-hours services

- Head injury protocols in GP surgeries and GP out-of-hours services should include:
  - Checking the patient's medication history using the NI Electronic Care Record (NIECR) or other source;
  - Treating patients on warfarin as a medical emergency and informing NIAS staff if the patient is being transferred by ambulance.
- Patients on warfarin who have recurrent falls should have a further risk assessment by their GP.

For Medical and Nursing staff in Emergency Departments

- It is your responsibility to be aware of and follow your Trust's protocol for managing head injury, including patients on warfarin.
- You should apply the Learning in this letter to your own clinical practice.
- You should use the NI Electronic Care Record (NIECR) to check a patient's medications. Do not rely solely on the patient/family telling you.

For ED Clinical Directors and ED Service Managers

- ED protocols for managing head injury should include a requirement:
  - To triage and treat patients on warfarin as a medical emergency;
  - To respond to advance notice from NIAS of patients on warfarin and arrange for immediate medical assessment on arrival in ED;
  - For ED Reception staff to routinely ask head injury patients if they are taking

warfarin;
    - For ED Triage staff to routinely use the NI Electronic Care Record to check a patient's medications and alert a doctor immediately if a head injury patient is on warfarin;
    - For Medical staff to respond immediately when alerted to a head injury patient on warfarin;
    - To perform neurological observations at a prescribed frequency consistent with the situation being a medical emergency;
    - For staff to check the patient's INR however minor the head injury;
    - For medical staff to have a lower threshold for performing CT. In general, immediate CT should be requested if there are signs of possible intracranial bleeding, i.e. the head injury was sufficient to cause facial or scalp laceration or bruising or persistent headache or loss of consciousness or amnesia or a reduced Glasgow Coma Scale (GCS), unless the doctor has good reason not to;
    - To give Prothrombin Complex Concentrate immediately and before INR and CT results are available, if there are signs of possible intracranial bleeding.
- Prothrombin Complex Concentrate (PCC) should be stored in ED to enable immediate administration when it's needed.
- PCC should be ordered in multiples of 500 units to make dosing schedules easier.
- ED Escalation Plans must be activated to a level that is effective in maintaining waiting times that meet the College of Emergency Medicine standards for safe care. Additional staff should be brought in when the number of people registering at ED reception is greater than the number that staff on duty can process within the waiting time standards. Triggers for activating Escalation Plans and the actions to be taken, must be clear, with increasing levels of action if initial actions do not resolve the problem. To enable an early response, trigger levels for Escalation Plans should be based on the number of patients registering per hour as well as other triggers.
- When waiting times for higher Category patients are greater than the recommended level, Triage and Medical staff should be informed so that they can adjust their prioritisation of patients accordingly.

For Clinical Directors and Service Managers in all inpatient or residential settings

- Patients already in hospital or residential care may suffer a head injury following a fall and should be assessed and managed in the same way as other head injury patients.
- Staff should be reminded of protocols for managing head injury, including injury sustained following a fall in hospital or Trust nursing/residential care.

ACTION REQUIRED

Action by HSC Trusts:

1. Please confirm:
    a. That this letter has been disseminated to the Trust staff groups named in the Transferable Learning Section, and other relevant Trust staff;
    b. That your Trust ED protocol(s) for managing head injury has been amended as necessary to reflect the content of the Transferable Learning section of this letter;
    c. That your Trust protocol(s) for managing head injury in patients in

hospital or Trust nursing/residential settings has been amended to reflect the content of the Transferable Learning section;

d. That the protocols in b) and c) have been disseminated to relevant staff;
e. That your Trust ED Escalation Plan has been amended to reflect the content of the Transferable Learning section;
f. That key ED staff know the procedure to increase staffing levels in response to increased numbers of patients registering at ED and/or other escalation triggers.

2. Please reply by **30 April 2014** to **alerts.hscb@hscni.net**

Action by NI Ambulance Service (NIAS)

1. Please confirm:
   a. That this letter or an equivalent urgent clinical update has been disseminated to relevant NIAS staff;
   b. That NIAS protocols for management of head injury reflect the content of the Transferable Learning section in this letter.

2. Please reply by **30 April 2014** to **alerts.hscb@hscni.net**

Action by NIMDTA

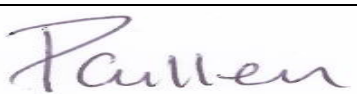
1. Please disseminate this Learning Letter to doctors in training in relevant specialties.

Action by Directorate of Integrated Care

1. Please disseminate this Learning Letter to all GPs and GP Out-of-hours services for further dissemination to relevant staff.

Action by RQIA

1. Please disseminate this Learning Letter to relevant Independent Sector Providers.

Date issued	8 January 2014	
Signed		
	Dr Carolyn Harper Medical Director and Director of Public Health	Mrs Pat Cullen Acting Director of Nursing and AHPs

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Distribution List: Head Injury in Patients on Warfarin – Treat as a Medical Emergency

	To – for Action	Copy		To – for Action	Copy
HSC Trusts			**PHA**		
CEXs	√		CEX		√
Medical Director		√	Medical Director/Director of Public Health		√
Directors of Nursing		√	Director of Nursing/AHPs		√
Directors of Social Services			PHA Duty Room		
Governance Leads		√	AD Health Protection		
Directors of Acute Services		√	AD Service Development/Screening		√
Directors of Community/Elderly Services			AD Health Improvement		
Heads of Pharmacy		√	AD Nursing		√
NIAS			AD Allied Health Professionals		√
CEX	√		Clinical Director Safety Forum		√
Medical Director		√	**HSCB**		
RQIA			CEX		√
CEX	√		Director of Integrated Care	√	
Medical Director		√	Director of Social Services		
Director of Nursing		√	Director of Commissioning		√
Director for Social Care			Alerts Office		√
NIMDTA			Dir PMSI & Corporate Services		√
CEX / PG Dean	√		**Primary Care (through Integrated Care)**		
QUB			GPs & GP OOHs services		√
Dean of Medical School		√	Community Pharmacists		
Head of Nursing School		√	Dentists		
Head of Social Work School			**Open University**		
Head of Pharmacy School		√	Head of Nursing Branch		√
Head of Dentistry School			**DHSSPS**		
UU			CMO office		√
Head of Nursing School		√	CNO office		√
Head of Social Work School			CPO office		√
Head of Pharmacy School		√	CSSO office		
Clinical Education Centre		√	CDO office		
NIPEC		√	**NI Social Care Council**		
GAIN Office		√	**Safeguarding Board NI**		
NICPLD		√			