Breach of Duty in Neurological Conditions: A Paramedic Perspective

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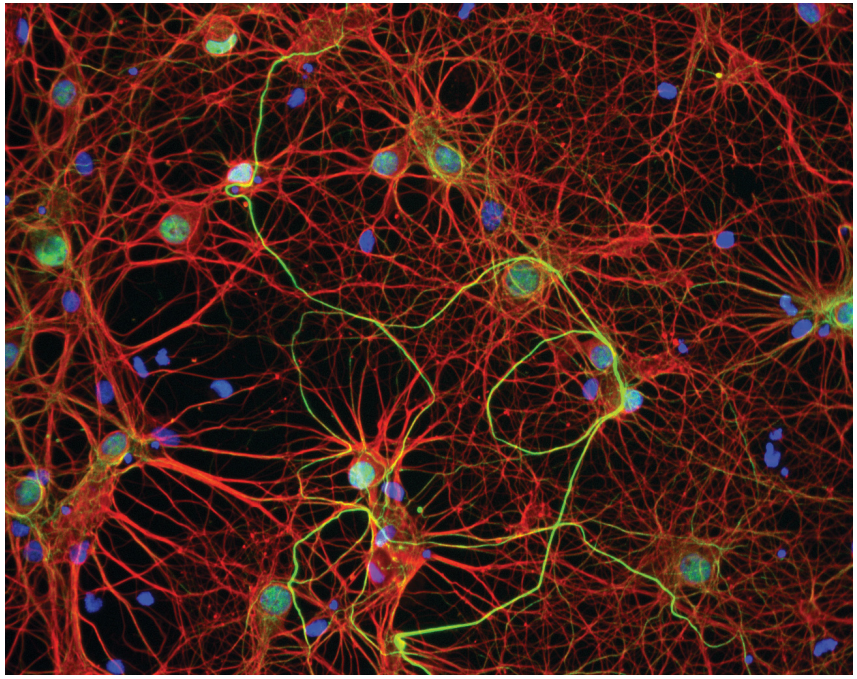
To consider

- Call handling & triage
- Response standards
- Stroke & TIA
- Head (Brain) injury
- Headaches
- Dizziness
- Spinal cord injury
- Seizures
- Where is the evidence



Call handling*

- Origin
  - 999 service
  - NHS 111 service
  - Health care professionals dedicated line

- Triage for response
  - Call handlers are not clinicians
  - Initial information and choice of algorithm
  - Target response time
    - Standards varied by devolved administrations
    - Top priority; typically cardiac arrest, respiratory arrest & choking.
    - Most neurological emergencies will fall within the next priority band or below
    - Recognition of time sensitive or time critical needs
  - Pre arrival instructions
  - Further triage & call back
    - HCP

* TMK Not a qualified call handler

Response standards

England

- Category 1
  - Immediately life threatening
  - Average 7 mins; 90% in 15 mins
  - Life threatening condition, such as cardiac or respiratory arrest
- Category 2
  - Emergency
  - Average 18 mins; 90% in 40 mins
  - Serious condition, such as stroke or chest pain
- Category 3
  - Urgent
  - 90% in 2 hours
  - urgent problem, such as an uncomplicated diabetic issue
- Category 4
  - Less urgent
  - 90% in 3 hours
  - Non-urgent problem, such as stable clinical cases,

Wales

- RED
  - Immediately life threatening
  - 65% in 8 mins
  - imminent danger of death, such as a cardiac arrest
- AMBER
  - Serious but not immediately life-threatening
  - No national response standard
- GREEN
  - Non urgent
  - No national response standard
  - clinical telephone assessment or handover to other HCP

Response standards

Scotland

- PURPLE
  - Target 75% in 8 mins
- RED
  - Target 75% in 8 mins
- AMBER
  - Target 95% in 19 mins
  - Likely need for HASU
- YELLOW
  - Target 95% in 19 mins
- GREEN

Northern Ireland

- Category 1
  - Potentially Immediately life threatening
  - Average 8 mins; 90% in 15 mins
  - life threatening condition, such as cardiac or respiratory arrest
- Category 2
  - Potentially serious
  - Average 18 mins; 90% in 40 mins
  - Potentially serious
- Category 3
  - Urgent
  - 90% in 2 hours
  - urgent problem, such as an uncomplicated diabetic issue,
- Category 4
  - Less urgent
  - 90% in 3 hours
  - non-urgent problem, such as stable clinical cases,

Potential for error

NON CLINICIANS ANSWERING CALLS

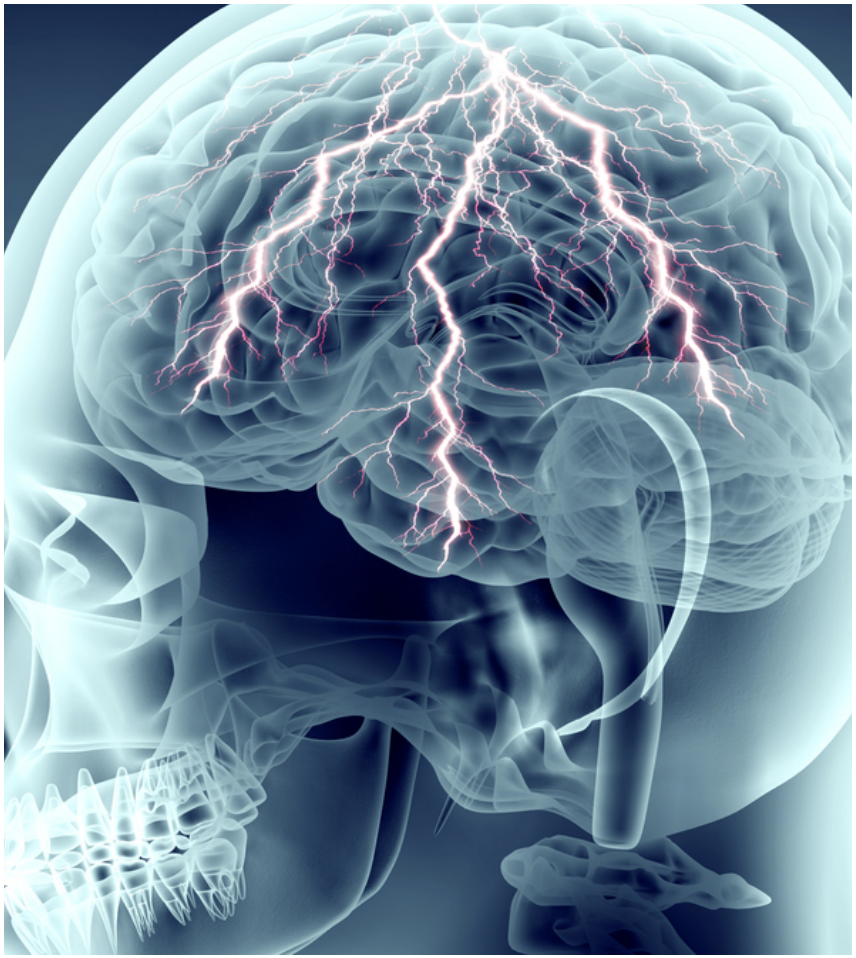
USING DECISION SUPPORT SOFTWARE

Interpretation of the information from the caller

- Most cases caller is a lay person
- Key questions
  - Conscious?
  - Breathing?
- Nature of the problem & chief complain
- Questions and advice based on algorithm selected
  - 'Assault; electrocution; stab/gunshot/ penetrating (trauma); Traffic accidents'
  - 'Sick person; Unconscious: Unknown problem'
  - 'Back pain (non traumatic); Convulsions/fitting; Headache; stroke'
  - 'Falls/back injuries (Traumatic)'

Some potential errors

Call handling and dispatch

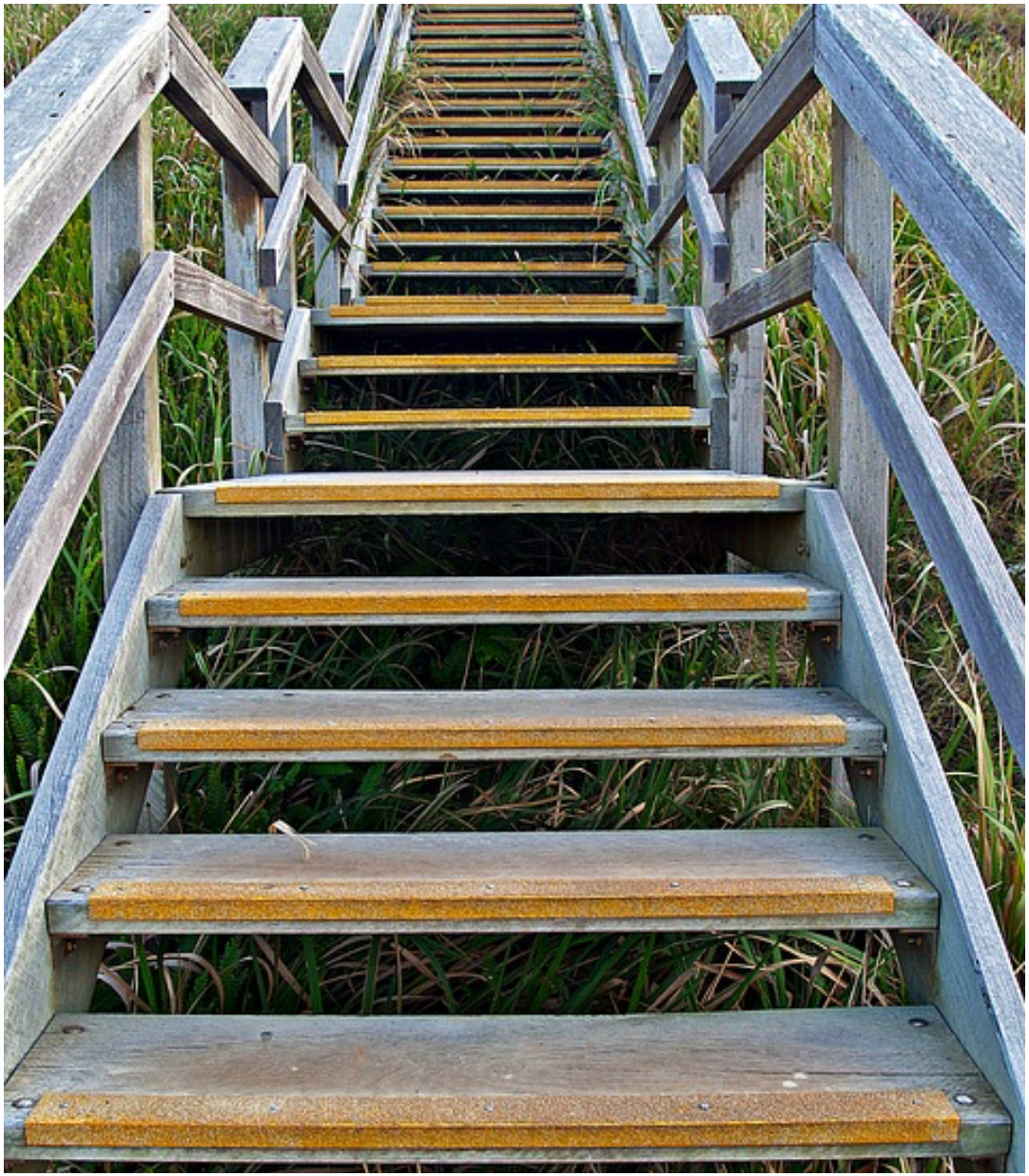


- Incorrect interpretation
- Incorrect response prioritization
- Incorrect or omitted advice
- Influence responder

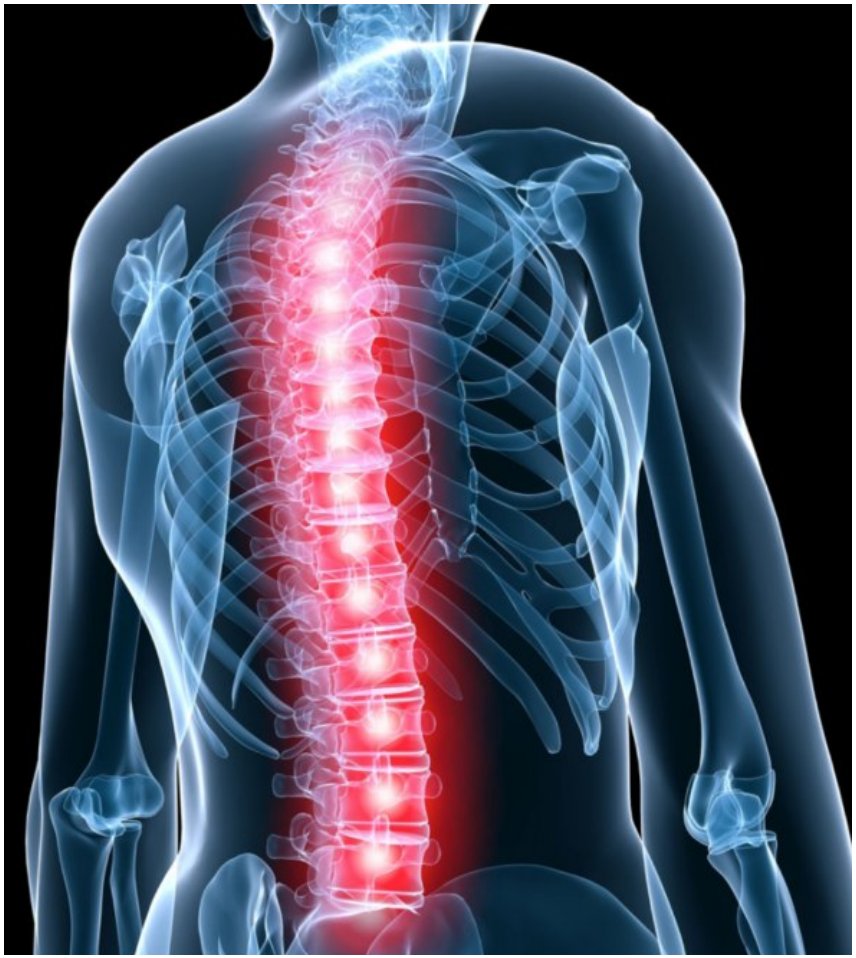
Some potential errors

Missing key elements of the history

- Unwell person
- Intoxication and/or dependency
- Trauma/chest pain preceding seizure



Known risks but no alternative



- Fall downstairs
- High demand with high priority calls
- No one to send

Balancing risk

- Patient in hospital, but not the right hospital.
  - Hyper Acute Stroke Service
  - Neurosurgical Unit
  - Imaging Services
- HCP requests for transfer

Management by ambulance clinicians

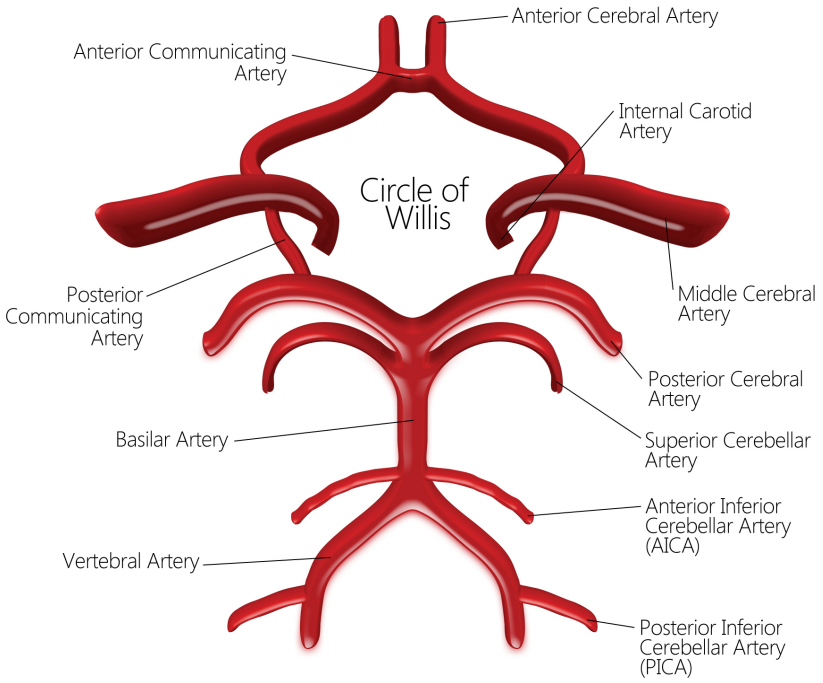
Some patterns seen in my medico-legal practice

- Assessment by inclusion
- Temptation to try and diagnose
- Forming an initial view and sticking with it to the exclusion of other alternative explanations
- Awareness, or not, of ‘Red Flag’ symptoms
- Misdirected by intoxication

Stroke & TIA

Some potential errors

- Atypical presentation
  - Exclusion based on negative FAS test
  - Not realizing the importance in changes in balance, mobility, vision …
  - Assumptions about age
- Attributing symptoms to other explanations
  - 'Lying in a funny position'
- Unnecessary delay on scene
  - Failure to recognize potential time criticality; needs
    - Early assessment
    - Early consultation
    - Early disposition decision
    - Early transportation
- Wrong destination
  - Policy for admission to HASS will be in place
  - Consultation, referral, transfer.
- Disregard possibility of a TIA (symptoms resolved)
  - Delayed referral
  - No referral/consultation



Head injury & non traumatic brain injury

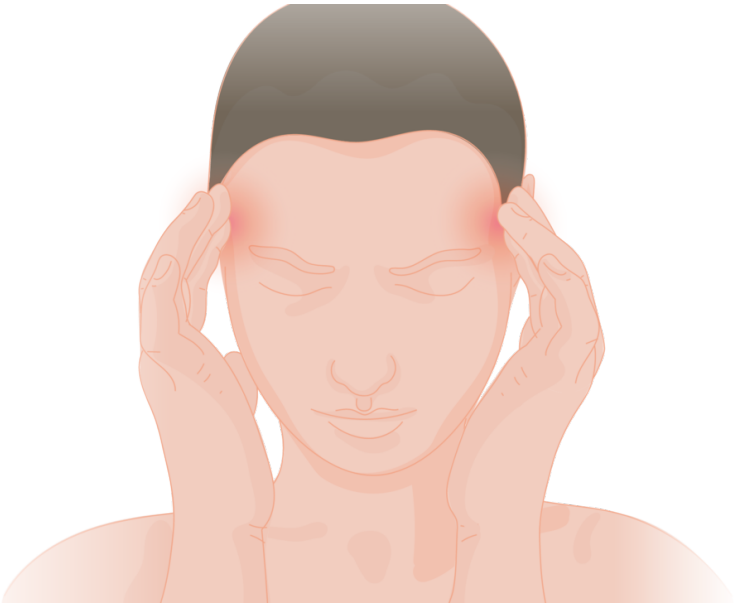
Some potential errors

- Missing mechanism of injury obscured by a co-morbidity or intoxication.
- Not recognizing chronic or non traumatic brain injury
- Not giving significance to;
  - changes in behavior
  - vision
  - mobility
  - sensation (neuropathy)
  - light sensitivity
  - neck stiffness
- Attributing nausea and vomiting to gastroenteritis or other GI infection
- Poor and inconsistent application of the Glasgow Coma Scale score.
  - Reliance on AVPU
- Poor or absent assessment of muscle power and tone
- Not limiting risk of secondary insult

Headaches

Some potential errors

- Poor or incomplete history taking on base assumption clinical presentation is benign or migraine
  - Onset
  - Location
  - Duration
  - Characteristics
  - Aggravating/alleviating
  - Radiating
  - Timing
  - Severity
  - Associated symptoms
  - Past medical history & co-morbidities
  - Drug history
  - Changes in diet
  - Allergies
  - Hydration
  - Menstrual cycle …
- Not consulting where necessary
- Poor documentation and record keeping



Dizziness

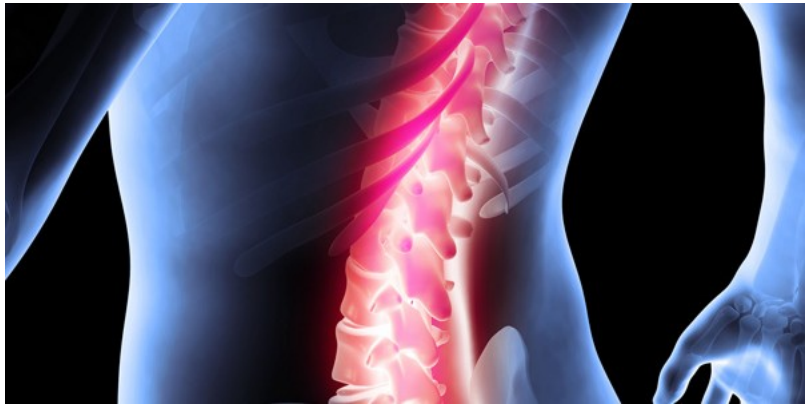
Some potential errors

- Poor or incomplete history taking on base assumption clinical presentation of benign vertigo
  - Onset
  - Location
  - Duration
  - Characteristics
  - Aggravating/alleviating
  - Radiating
  - Timing
  - Severity
  - Associated symptoms
  - Past medical history & co-morbidities
  - Drug history …
- Not consulting where necessary
- Poor documentation and record keeping

Spinal cord injury

Some potential errors

- Missing mechanism of injury obscured by a co-morbidity or intoxication.
- Focus on the C spine and omitting assessment of the complete spinal column
  - Clearing the C spine
- Not recognizing chronic or non traumatic spinal pathology
  - Assumption that low back pain is benign 'mechanical back pain'
  - Not undertaking an adequate assessment to identify focal neurological symptoms, power and tone in the limbs
- Not giving significance to changes in, mobility, sensation (neuropathy.)
- Not giving attention to symptoms being bilateral or unilateral
- Inappropriate treatment interventions
  - Physiotherapy
  - Manipulation
  - Exercises
- Inappropriate or inadequate immobilization and transfer



Seizures

- Base assumption that a first seizure in a child is a febrile convulsion
- Not making the association with other factors (assuming seizure = epilepsy)
  - Hypoglycaemia
  - Infection
  - Neurological symptoms
  - Trauma
  - Alcohol dependency
  - Medicines
  - Drugs

Range of possibilities

- Single explanation for presentation is unlikely – more commonly a range of possibilities
- Other possibilities may be more or less serious than the preferred explanation
- Are there red flag symptoms?
- If discharging the patient on scene can potentially dangerous conditions be positively excluded?

Where to find the evidence

In addition to the standard clinical records

- Computer Aided Dispatch (CAD) with Sequence of Events Log
    - For timings of events, chief complaint, coding, allocated resources and response times.
- Internal and External Call Audit
    - For compliance with decision support software and coding decisions
- Audio Files of Calls & Call Transcripts
    - For information underpinning the coding and dispatch decisions as well as the advice provided
- Trust Policy, may be in collaboration with local stroke services, for HASS admissions
    - For Local Disposition to HASS and referral criteria

THANK YOU

... and I hope that you found the session useful

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