The Dudley Group NHS
NHS Foundation Trust

Black Country Coroner's District

In the matter of Mr Frederick White

Response to Regulation 28 Report to Prevent Future Deaths

1. The Dudley Group NHS Foundation Trust makes this submission in response to a Regulation 28 Report to Prevent Future Deaths issued by the Senior Coroner for the Black County following the inquest into the death of Mr Frederick White held on 28th May 2015.

2. Facts
The facts are set out in the Rule 28, 'Report to Prevent Future Deaths' (section 4).

3. The following issues have been raised by H.M. Coroner

I Spinal injuries are relatively uncommon but have the potential to cause significant morbidity and mortality if not managed effectively. Mr White was an elderly patient who was at risk of falling and during the course of the inquest evidence emerged showing that he had sustained a traumatic injury of significant blunt force trauma. He also gave a description of feelings of numbness and lack of sensation in his legs and there was also a drop in blood pressure, which should have prompted a conservative approach in treating the patient by applying immobilisation on suspicion of spinal cord injury during his initial examination and assessment.

II Evidence emerging from the inquest suggested that the initial failure to immobilise the patient then continued when he arrived at hospital and the triage process failed to adequately assess the risk again it appears the triage process is heavily reliant upon the handover from the paramedic crew without further and detailed assessment.

III It wasn't until five hours after the initial fall that a suspected spinal cord injury was diagnosed.

IV In light of the inquest findings, you may consider that the guidelines and policy in the assessment and management of actual and potential spinal injuries my need to be examined.

4. Outcome of Internal Investigation & Root Cause Analysis

An internal investigation was undertaken following the inquest and concluded 19th June 2015. The investigation was led by an Executive Director and conducted by senior medical and nursing staff from the Emergency Department and the Trusts' Governance Department. The investigation noted that:

- Current triage assessment does not specifically require a grip test. In this incident there is no documentation suggesting that the patient had neck pain or any neurological deficiency. The department recognises that the use of a simple grip test, currently not routinely used by the triage nurses, could be beneficial in identifying neurology where there is a history of a fall.

- The Emergency Department was operating at full capacity when the patient arrived, as noted by the Coroner; the patient was seen 2h 41min post admission by a doctor. The Trust aims to see patients of this type within 1 hour and also aims to have senior (middle grade and consultant) medical staff to be able to provide a 'Rapid Assessment' of all ambulance-borne patients at arrival.

- There was a 1h 38min delay in getting to CT and a 1h 51min delay in getting the report. The Trust aims to have CT within 1 hour and a report within 1 hour.

Although the investigation concluded that spinal cord injuries are uncommon and even if the patient had been immobilised and diagnosed earlier, the patient would not have survived. Irrespective of this there are actions which the Trust will take to prevent incidents of this nature in future.

5. Actions to Prevent Future Deaths

The following actions together address H.M Coroner's concerns I-V above:

No	Date Action Agreed	Recommendation	Actions Required	By whom	Status (rag)
1.	30 Mar 2015	Debriefing of all staff involved in the incident	Medical and Nursing supervisors to debrief relevant staff members	Consultant ED Consultant ED2 Sister ED	Complete
2.	19 Jun 2015	Raise awareness of possible neck injury in elderly patients with head injury	Inclusion in ED Governance newsletter sent to all present and future staff Discussion at Middle Grade teaching programme Discussion at Weekly Management meeting Discussion at Quarterly Governance meeting	Consultant ED2 Consultant ED2 Consultant ED2 Consultant ED2	In progress
3.	19 Jun 2015	Reinforce the need to maintain immobilisation until all spinal imaging has been reported	Inclusion in ED Governance newsletter sent to all present and future staff Discussion at Middle Grade teaching programme	Consultant ED2 Consultant ED2	In progress
4.	19 Jun 2015	Triage nurse assessment includes the test grip in elderly patients with head injury	Review of triage nurse training programme to include requirement for grip assessment in specific patients	Senior Clinical Nurse Specialist	In progress
5.	19 Jun 2015	Consider the possibility of initiating a Rapid Assessment by ED middle grade or consultant for ambulance borne patients.	Formal development of a business case and risk assessment to support provision of a Medical Rapid Assessment service for all patients presenting via ambulance	Clinical Director Urgent Care	Not Yet Started
6.	02/07/2015	Compliance with Coroners Regulation 28 Report to Prevent Future Deaths	Present the Report to Prevent Future Deaths at the Divisional Governance Meeting and agree action plan to response to be with the coroner by 29/07/2015	Divisional Governance Lead	Complete

6. Review of Actions

As the subject of a formal Trust investigation the Action Plan will be reviewed under the Serious Incidents Process. All actions will be reviewed and approved by the Clinical Quality, Safety & Patient Experience Board Sub-Committee by the end of Quarter 3, in December.

West Midlands Ambulance Service NHS
NHS Foundation Trust

Report on response to a Regulation 28 report to prevent future deaths issued by Mr Zafar Siddique the Senior Coroner for the coroner area of Black Country

Background

On 9 April 2015, Mr Zafar Siddique commenced an investigation into the death of Mr Frederick White.
The investigation concluded at the end of the inquest on 28 May 2015. The conclusion of the inquest was a narrative conclusion:
Mr White sustained a fall on the 29 March 2015 which caused a traumatic spinal cord injury. There were failures in recognising his symptoms when paramedics arrived at the scene and failures to properly immobilise him using a cervical spine collar. There were also further failures in his care when he arrived at Russells Hall Hospital during further assessment and immobilisation. Overall I am satisfied on the balance of probability that these collective failures more than minimally, trivially or negligibly contributed to his death.

CORONER'S CONCERNS

During the course of the inquest the evidence revealed matters giving rise to concern. In my opinion there is a risk that future deaths will occur unless action is taken. In the circumstances it is my statutory duty to report to you.

The MATTERS OF CONCERN are as follows.
(1) Spinal injuries are relatively uncommon but have the potential to cause significant morbidity and mortality if not managed effectively. Mr White was an elderly patient who was at risk of falling and during the course of the inquest evidence emerged showing that he had sustained a traumatic injury of significant blunt force trauma. He also gave a description of feelings of numbness and lack of sensation in his legs and there was also a drop in blood pressure, which should have prompted a conservative approach in treating the patient by applying immobilisation on suspicion of spinal cord injury during his initial examination and assessment.
(2) Evidence emerging from the inquest suggested that the initial failure to immobilise the patient then continued when he arrived at Hospital and the triage process failed to adequately assess the risk again it appears the triage process is heavily reliant upon the handover from the paramedic crew without further and detailed assessment.
(3) It wasn't until five hours after the initial fail that a suspected spinal cord injury was diagnosed.
(4) In light of the inquest findings, you may consider that the guidelines and policy on the assessment and management of actual and potential spinal injuries may need to be examined.

Overview of West Midlands Regional Trauma System

The West Midlands covers a mixed urban and rural population of 5 million people. Within the region are the Metropolitan area of Birmingham (population 1.1million) and the large cities of Coventry (population 320,000) and Stoke-on-Trent (population 250,000) as well as relatively isolated, rural areas in certain parts.

The Regional Trauma System in the West Midlands went live on the 26th of March 2012. The planning for this was a lengthy, complex process which has led to a Regional Trauma Care System that we can truly be proud of. It has resulted in four Major Trauma Centres, with a network of supporting Trauma Unit hospitals established across the region.

WMASFT has been a major stakeholder in the planning and implementation of this system. This has included setting up a dedicated trauma desk in our control room staffed by experienced Critical Care Paramedics. In addition a doctor led helicopter team in the day has been supplemented by a night time doctor led car team that results in 24 hour support at major trauma cases. This team is called ECT/MERIT.

The Regional Trauma System consists of three trauma care networks with a major trauma centre at the heart of each network. The major trauma centres are supported by trauma units, local emergency hospitals and specialist rehabilitation hospitals. Three trauma care networks have been set up in the West Midlands. Each network has an adult major trauma centre at its heart plus the Birmingham Children's Hospital which is the regional major trauma centre for children.

Governance for the system is robust with well-established monthly MTC network boards supported by a regional Trauma Network Office, a regular Performance and Quality Group and an innovative Trauma Issues Database reporting system to ensure openness and the prompt resolution of issues.

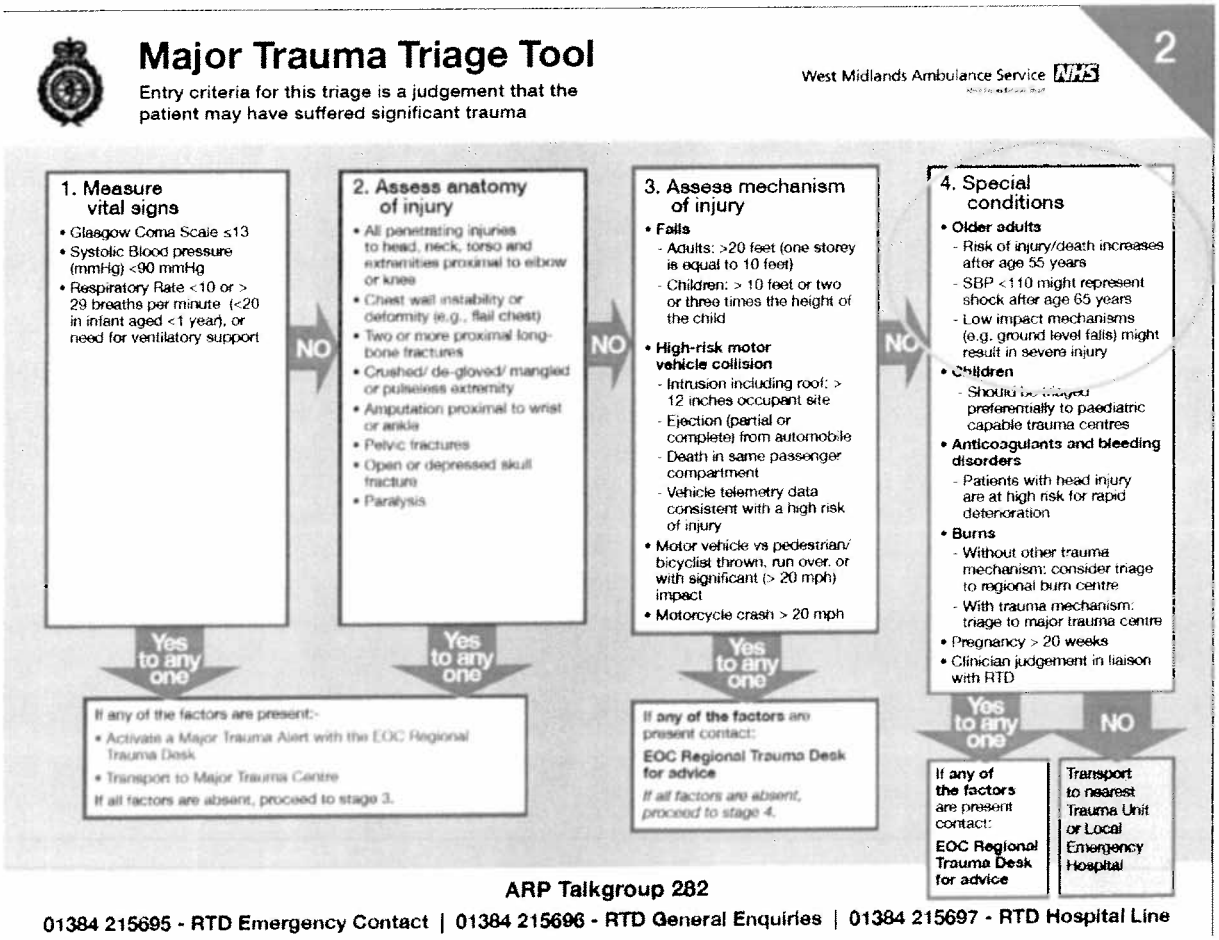
The Major Trauma Triage Tool

All WMASFT clinicians have received training in the use of a trauma triage tool that is used to identify major trauma patients, these patients are now taken directly to a Major Trauma Centre (MTC) following discussion with the Regional Trauma Desk (RTD) if the journey can be made within 45 minutes. If the journey time to MTC is greater than 45 minutes the patient can be taken to a supporting Trauma Unit (TU) for optimisation prior to being transferred to an MTC. The ECT/MERIT team can facilitate this transfer.

Patients who trigger the tool outside of a 45 minute zone will be taken to the nearest Trauma Unit (TU) and then transferred on to the MTC.

The RTD will make decisions in conjunction with the Medical Emergency Response Intervention Team (MERIT) Doctor and the MTCs on a case by case basis. This means that on occasions, patients outside of the 45 minute zone may be taken direct to the MTC. The MERIT team will also be available to provide assistance on scene, intercept en route or to facilitate a transfer.

The entry criterion for the tool is a judgement by the clinician that the patient has suffered *significant trauma.*



WMASFT uses a version of a triage tool based upon the American College of Surgeon's Field Triage Guide and has recently revised its triage tool to include the most recent recommendations from the American Department of Health and Human Services Centre for Disease Control and Prevention, these recommendations are reproduced below:

Guidelines for Field Triage of Injured Patients

Recommendations of the National Expert Panel on Field Triage, 2011

On arrival at the scene of an injury, the EMS provider must determine the severity of injury, initiate management of the patient's injuries, and decide the most appropriate destination hospital for the individual patient. These destination decisions are made through a process known as "field triage," which involves an assessment not only of the physiology and anatomy of injury but also of the mechanism of the injury and special patient and system considerations. Since 1986, the American College of Surgeons Committee on Trauma (ACS-COT) has provided guidance for the field triage process through its "Field Triage Decision Scheme."

Older Adults: Criterion Modified

This criterion was modified to include statements that recognize that a SBP <110 might represent shock after age 65 years and that low-impact mechanisms (e.g., ground-level falls) might result in severe injury. The Panel recognized that adults aged >65 years are not transported consistently to the hospital best equipped to manage their injuries (high rates of under triage relative to other age groups). A retrospective analysis of 10 years of prospectively collected data in the Maryland Ambulance Information System identified a higher under triage rate for patients aged ≥65 years compared with those aged <65 years (49.9% and 17.8%, respectively; $p<0.001$). On subsequent multivariate analysis, the authors noted a decrease in transport to trauma centres for older patients beginning at age 50 years (OR = 0.67; 95% CI = 0.57–0.77), with a second decrease at age 70 years (OR = 0.45; 95% CI = 0.39–0.53) compared with those patients aged <50 years. In a 4-year retrospective study of 13,820 patients in the Washington State Trauma Registry, those patients aged >65 years were less likely than those aged ≤65 years to have had the prehospital system or the trauma team activated. In addition, use of multivariate logistic regression indicated that physiologic triage variables (e.g., blood pressure and heart rate) were unreliable predictors of mortality or interventions in the hospital.

Several studies suggest that differences in the physiologic response to injury and high-risk mechanisms in older adults might partly explain under triage rates in this age group. In a retrospective chart review of 2,194 geriatric patients (aged ≥65 years) at a Level 1 trauma centre, mortality was noted to increase at a SBP of <110 mmHg. A retrospective review of 106 patients aged >65 years at a Level II trauma centre indicated that occult hypotension (i.e., decreased perfusion that is not evident by standard vital sign criteria) was present in 42% of patients with "normal" vital signs.

In addition, the Panel reviewed literature that indicated that older adults might be severely injured in low-energy events (e.g., ground-level falls). An analysis of deaths reported by the King County Medical Examiner's Office (King County, Washington) indicated that ground level falls accounted for 237 (34.6%) of all deaths (684) in patients aged ≥65 years. A study

of 57,302 patients with ground-level falls demonstrated higher rates of intracranial injury and in-hospital mortality among adults aged ≥70 years.

On the basis of its review, the Panel elected to strengthen the criterion regarding older adults in Step Four. "SBP <110 might represent shock after age 65" and "low-impact mechanisms (e.g., ground-level falls) might result in severe injury" were added under "Older Adults" in Step Four because under triage of the older adult population is a substantial problem, the evidence reviewed suggests that the physiologic parameters used in younger patients might not apply to older adults, occult injury is likely to be greater among older adults, low-energy transfers (e.g., ground-level falls) might result in serious injuries in this population, and field identification of serious injury among older adults must be more proactive.

National Perspective

At the 8th Annual London Trauma Conference last December Professor [redacted] the National Clinical Director for Trauma spoke on the Elderly in Trauma Epidemic, with the 75+ population set to double by 2027, Prof. Moran discussed how we need better triaging, more appropriate transfers (not sending all to major trauma centres), network guidelines, and trauma-geriatricians if we are to deal with this 'demographic tidal wave'.

Elderly Trauma Working Group

In response to this WMASFT has liaised with the regional trauma network office and Professo[redacted]ne clinical lead for the regional trauma system to set up an elderly trauma working group to identify the issues facing pre hospital providers with elderly trauma patients and provide advice and recommendations

Elderly Trauma Working Group
Friday 3rd July

1. Welcome and Introduction
2. The Facts – Professor Porter
3. Pre-hospital Triage
4. ED Triage
5. Earlier Inpatient Recognition
6. AOB