Minutes of the Fifth Ordinary Meeting

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'The Cheshire and Mersey Major Trauma Service: Incredible Journey'
Dr Nina Maryanji, Consultant in Accident and Emergency, University Hospital, Aintree, Liverpool

The Trauma Unit at University Hospital, Aintree opened recently to serve the 1.5 million people who live in Merseyside and Cheshire. It was developed following the recognition that cases of major trauma are best dealt with by large and fully equipped units. In this talk, Dr Nina Maryanji outlined the journey that a patient makes following their accident up until the time they are discharged from care.

Why a Trauma Centre at University Hospital Aintree? A hub and spoke approach.
Liverpool is ideally positioned to receive patients from outlying parts of Merseyside and Cheshire, being well served by the motorway network. The hospital also has a helicopter pad. Children up to the age of 16 are taken to the Royal Liverpool Children's Hospital, Alder Hey, which has been renovated recently.

What is major trauma?
A patient who has suffered a major injury or a potentially life-threatening injury has experienced major trauma. Examples include head injury, and loss of a limb or a stabbing. However, the range of cases is very wide and some cases are bizarre. In 2015, the unit received 769 cases, (see Table 1). Although this made up only 5% of the total annual case load for the unit, each case of major trauma is very labour-intensive.

Table 1: Cases of Major Trauma in 2015

Falls from less than 2 metres: 301 (e.g., stepladder, DIY at home)
Falls from more than 2 metres: 186 (e.g., construction workers)
Motorway and road traffic accidents
Mountaineering and hill walking
Victims of stag and hen nights, with the contributory effect of alcohol
Trampolining
Drug and gang culture: shootings 6, stabbings 16, fisticuffs & kicks 59

The typical trauma patient and the costs to the patient and to society.
Trauma can happen to anyone, and most cases are potentially avoidable. Adult trauma patients vary in age from 16 to 100. However, the average age is 59, two thirds of patients are male and they are often under the influence of alcohol.

The average length of stay in hospital for the patient is 9 days at a cost of about £2000 per day for a bed on the Intensive Care Unit and about £800 per day in a hospital bed.

While in hospital and while recovering from their injuries and unable to work, a wage earner is unable to support their family. It may take many months before the patient has fully recovered.

The 999 call and the start of the journey.
999 calls are received by the communication centre based at Broughton, near Manchester. It is open 24 hours a day and 20% of calls are made between midnight and 9 am. The centre triages the call and where necessary, aims to send out the trauma team within 8 minutes. The centre will also be aware of other callouts at the same time and of local traffic conditions.

The Mobile Trauma Team.
The team that goes out to the patient is equipped to assess the accident. It is equipped to perform emergency care including, if necessary, intubation to secure the airway, initial treatment of major haemorrhage, and stabilising a fracture, including that of the neck. The team also informs the trauma centre about the patient(s) using the acronym ATMIST. This stands for **A**ge, **T**ime of injury, **M**echanism of injury, **I**njury, vital **S**igns, **T**reatment given and estimated time of arrival.

Reception by the trauma team at Aintree.
On being informed of an incoming major trauma case, the team leader assembles the team, which can be up to 20 persons, (see Table 2).

Table 2: Personnel of the Major Trauma Team

Medical Staff	Nursing Staff	Ancillary Staff
Emergency Physician	Senior Nurse	Receptionist
Anaesthetist	Nurse	Porter
General surgeon	Scribe	Radiographer
Orthopaedic surgeon	Health care assistant	Laboratory

The team leader, normally the emergency physician, receives a hand over of the patient's care from ambulance team and then directs the ongoing management of the patient. The aim of the emergency room management is to examine the patient and diagnose the injury, to implement resuscitation and essential initial treatment and then to send the patient to the appropriate unit. The team leader may escalate or de-escalate treatment as necessary.

The trauma unit has its on-site dedicated CT scanner, and this is used, when necessary, in the first 30 minutes in the management of the patient to discern all of the injuries of the severely injured patient.

The trauma unit will also, when needed, initiate the treatment of major haemorrhage, including the administration of tranexamic acid. Also, antibiotics and pain relief will be administered when appropriate.

Disbursal of the patient from the trauma centre.
The Trauma centre can be compared to a sorting office. Once the patient's condition has been stabilised and the extent and nature of their injuries have made, the patient is sent on to the next stage of their journey, (see Table 3).

Table 3: Disbursal of the patient from the Trauma Centre

Operating Room (including general surgery, orthopaedics and trauma, ENT, Eyes, Neurosurgery) and then to the ward.
Operating Room to Intensive Care Unit.
Discharge home.
Mortuary.

On examination, a proportion of patients thought to have had major trauma are found to be physically unscathed and although shaken up, can be sent home to be looked after there. In contrast, a few patients are so badly injured so that they die and will be admitted to the mortuary. The coroner will need to be informed.

However, the majority of patients who have experienced major trauma will be admitted to hospital, either to a general ward or the Intensive care unit.

Communication to other people and other services.
One of the duties of the team leader is to communicate regularly with the other people involved and keep them updated. Trauma is very traumatic for the patient. It is also very stressful for the relatives and friends of the patient. It is also stressful for the medical staff, the ambulance staff and the police and fire service if they have been involved.

Regular communication between the units involved and with the patient and the relatives are essential parts of trauma management.

Debriefing after the event.
The ambulance teams often experience very stressful scenes at the place of the accident, especially at road traffic accidents, after house fires and after violence: some gangs' administration of rough justice can be very distressing for the victim and for those who look after them, which includes the medical and nursing staff, the police and the fire service.

All personnel in these different units need a period of time to debrief. Management of cases of major trauma is stressful and exhausting. Unfortunately, in medicine and nursing, rota hours make it difficult for the whole team to get together afterwards and talk through the events. And in the meantime, the rest of the hospital must continue to function. However, failure to allow time for debriefing and for rest periods for staff may lead to burn out and disillusionment amongst the staff.

The Future.
Living a life will never be free of risk and episodes of major trauma are inevitable events in a big city in the 21st century.

Luckily, medico legal complaints following the management of cases of trauma are relatively rare in the United Kingdom at the moment. The widespread early use of CT scanning means that staff are exposed to irradiation, which may have long term consequences for them.

A major trauma unit such as the Aintree Trauma Unit allows an economic concentration of all the manpower and equipment to give a victim of major trauma the best chance of survival.

Dr J Sprigge