The hospital response to the Hillsborough tragedy

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Introduction
At 1500 on 15 April 1989, play commenced in the 1989 FA cup semifinal between Liverpool FC and Nottingham Forest FC. The venue was Hillsborough, Sheffield. Approximately 50,000 supporters had come to watch the match.
A large gate was opened to allow latecomers into the stadium. A large number of supporters entered through this gate and onto terraces which were already overcrowded. There was no escape from the terraces due to a large crowd-control wire fence at the front of the terrace.
There was a large crush of people and most of the deaths and serious injuries were caused by traumatic asphyxia.
At 1506 play was abandoned. At first there appeared to be some crowd trouble but no one realized that they were witnessing the worst disaster at a sporting event in the United Kingdom.
The Northern General Hospital and the Royal Hallamshire Hospitals both implemented their major disaster plans. As the Northern General Hospital was closest to Hillsborough it received most of the early and most seriously injured victims.
A total of 159 casualties were received by the two hospitals, all but four within 90 min of the declaration of the major incident. All of the severely injured were received within 45 minutes.

The dead
Seven patients were pronounced dead on arrival. Resuscitation was attempted on seven patients in cardiopulmonary arrest, but five of these did not respond. Two patients were resuscitated and admitted but both died. Therefore a total of 14 patients were pronounced dead in hospital. Eighty-one victims were pronounced dead at the site of the incident.

The seriously injured
The major injury was traumatic asphyxia. In the crush of people there was simply not enough space to expand the chest or abdomen to ventilate the lungs. This led to a spectrum of presentations from asystolic cardiac arrest, profound unconsciousness, status epilepticus, cerebral irritation and cortical blindness to headache and minor neurological symptoms.
Twenty patients with serious asphyxia were admitted: two patients who had been resuscitated from cardiac arrest, a further 16 patients who required ventilation and two other patients who developed cortical blindness.
One other patient with a chest injury required intensive care.
Nineteen patients were admitted to the intensive care units. A total of 81 patients were admitted.
Other injuries included five pneumothoraces, three brachial plexus injuries, a large number of soft tissue crush injuries, two forearm fractures and one minor ankle fracture.

Outcome
Ten of the ventilated patients have made excellent recoveries. Three patients have important neurological sequelae and three patients have severe neurological deficits.
Two patients died (those in cardiac arrest on admission).
Most of the other patients with less severe injuries were discharged within 1 week of the incident. Only four of these patients were transferred to other hospitals for convalescence.

Discussion
Many major incidents require the skills of the surgical staff of the hospital. In this incident the most severely injured needed urgent intensive care which involved the teamwork of physicians, anaesthetists and surgeons.
As with almost all major incidents there were severe communication difficulties but these are part of a judicial enquiry and cannot be discussed at the time of writing.
Communications were also hampered by interest of the media in the nature of the event and large numbers of staff
rang up the hospitals causing problems at the switchboard in one hospital. However, the live coverage of the event also brought large numbers of staff to the hospital, bypassing the call-out system.

The sudden arrival of large numbers of staff did cause some problems, however, since there were many medical volunteers who did not know the hospital major incident plan and presented at the patient triage area. Their help was invaluable but thought should be given to the siting of the volunteer sorting area and making this area obvious from the outset of an incident.

This incident was a severe test of the ability of a hospital to respond to the sudden influx of large numbers of patients requiring urgent resuscitation and to deal with large numbers of admissions.

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