

# Emergency medicine at a large rock festival

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## Abstract

**The organisation of on-site medical personnel and facilities is described for an open air rock concert attended by 62 000 people. Care of the majority of patients was completed on site, avoiding an increased workload for local hospitals and general practitioners. Many of the head injuries could have been avoided by preventing the distribution of promotional items and large drinks containers which were thrown as missiles.**

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Key terms: emergency medical facilities; public events; organisation of personnel.

Open air concerts attracting large crowds remain a popular feature of the rock music calendar. Venues range from public parks and sporting venues to private land. Profits can be considerable yet provision of medical assistance and sanitary facilities varies depending on the organiser and location.

The Monsters of Rock Festival is an all day rock concert held at Donington Park Race Circuit, Castle Donington, Leicestershire. In 1992 it was attended by 62 000 people. This festival is unusual in that it is held at a venue with permanent on-site medical facilities.

## Methods

The concert was held in the infield areas of the race circuit in August. Many people arrived the day before and left the day after, camping overnight at a site within the confines of the circuit.

Medical cover was provided by 12 doctors. Many of the doctors regularly attend race meetings at the circuit and were therefore familiar with circuit layout and medical facilities. Medical staff worked a shift system throughout the duration of the concert. Four doctors including a consultant anaesthetist, a consultant and registrar in accident and emergency medicine, and an orthopaedic registrar worked in the medical centre. Two doctors were located back-stage with first aid and advanced cardiac life support facilities, two doctors in a designated recovery area and two at medical posts providing first aid care around the venue. Other first aid posts were manned by St John Ambulance personnel. Two doctors were on duty overnight. This three level structure (first aid post, doctor in first aid post, and doctor in medical centre) has been used in previous large gatherings.<sup>1</sup>

Support for the medical staff was provided by 150 St John Ambulance personnel, six nurses, four paramedics, five Leicester Ambulance Service ambulances, each with a

paramedic crew and 10 St John ambulances. These were distributed around the circuit. The medical centre consisted of (1) a two bedded resuscitation room with a full range of resuscitation drugs and fluids, ECG and defibrillator, pulse oximeter, automatic non-invasive blood pressure monitor, intubation and ventilation equipment; (2) two bays with three examination couches; (3) a small operating theatre for minor procedures; (4) a recovery room with two beds; (5) a reception area for friends and relatives; (6) an office with a telephone.

The medical centre was in radio contact with doctors and various support services around the circuit. Local hospitals were aware of the event. All contacts with persons requiring aid were recorded on a history card and all cards were collected centrally for subsequent analysis.

## Results

Provision of the range of medical services was funded by the organisers of the event and cost £8740. A total of 1074 patient history cards were collected but 10 of these had no clinical information and were therefore discarded. In total, 1064 attendances were fully or partially recorded, of which 605(57%) were male. The average age was 22.8 years; 233 were attended by doctors, 967 by St John Ambulance personnel, and 170 by both; 82 were seen by nurses, and nine by paramedics. In all, 103 people were referred to the medical centre for treatment or a second opinion and 54 required observation in the recovery area; 31(2.9%) were referred to hospital, of whom five were admitted and 10 required hospital or general practitioner (GP) follow up. Two patients refused to go to hospital, both of whom had a suspected fractured scaphoid. The five cases requiring admission were an ankle fracture, a minor head injury, a fractured maxilla, a fractured orbital floor, and a recurrence of endometriosis.

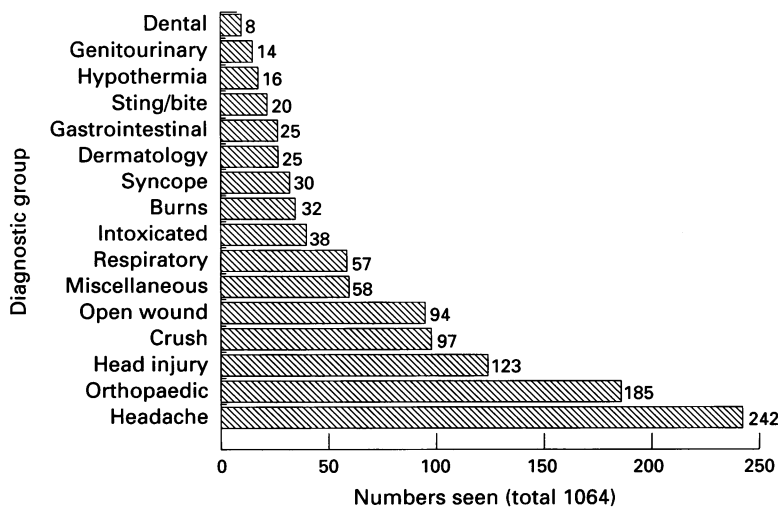
The diagnoses of attenders were recorded in several categories (figure). The most frequent diagnosis was headache, which accounted for 22.7% of attendances. Of the 123 patients who attended with a head injury, 62 had been struck by missiles. These were either large plastic containers (originally containing beer but usually containing urine at the moment of impact) or wooden replica LPs which had been given away as promotional items. Only 55 attenders (5.2%) were sufficiently intoxicated with alcohol or drugs for this to be recorded on their treatment card, and in 3.6% this was the main diagnosis.

Of the 180 orthopaedic and soft tissue injuries, there were nine fractures (on-site medical plus hospital diagnosis) and one

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Monsters of Rock, 1992: diagnoses of attendees.

recurrent dislocation of the shoulder which was reduced in the medical centre using nitrous oxide (Entonox).

Ten people who presented with respiratory complaints were hyperventilating. Six of the 42 attendees with asthma had either lost or forgotten their medication. In seven cases asthma was precipitated by crushing in front of the stage. Three percent of attendees presented with burns, all caused by campfires or motor-cycle exhausts.

### Discussion

It has previously been stated that approximately 1% of people attending a mass gathering will require aid.<sup>2</sup> At this concert 1.7% of attendees presented. The same investigators stressed the importance of equipment and facilities so that health care personnel can perform their duties adequately. Recommendations for the numbers of attending doctors and paramedics vary.<sup>1 2</sup> At the Monsters of

Rock concert the ratio of doctors to attendees was approximately 1:5000. This relatively large number of doctors allowed medical cover to be sited in both the immediate backstage areas and in the medical centre. The majority of attendees had their care completed on site without recourse to hospital or GP referral and associated transport costs. Chambers commented on the increase in workload of local GPs when a festival with little on-site medical cover was held in Cornwall.<sup>3</sup>

Relatively few of our patients were noted to be intoxicated with alcohol and no patient attended with a psychiatric manifestation of drug use. This contrasts with earlier reports of drug use at pop festivals.<sup>4</sup> This may be due to changing patterns of drug and alcohol use at such events, although the threshold for noting intoxication on the history cards may have been high.

Many of the injuries were avoidable. Distribution of any promotional item which could be used as a missile should be abandoned. An upper limit on the size of liquid containers should be considered and alcohol sold in small plastic cups. Campfires and alcohol do not mix well.

It is interesting to speculate on the motivation of those who attend a loud musical event when the most common complaint is headache. No patient sought medical advice specifically for deafness, suggesting that this is an accepted part of the rock concert experience. Medical attendants followed the example of back-stage hands in wearing earplugs, ear defenders, or a combination of the two.

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