The largest mass gathering

Medical cover for millennium celebrations needs careful planning

An organised mass gathering has predictable medical problems. Yet emergency care at these events has been criticised as haphazard at best and dangerous at worst, with a wide variation of medical care provision.[1] On 31 December 1999 potentially the largest ever series of mass gatherings will occur. What lessons should we apply when planning the millennium celebrations?

No clear definition of a mass gathering exists. Large crowds are commonly associated with leisure events but may occur at religious festivals, parades, and demonstrations and during public disorder. A figure of 1000 has been suggested to constitute a mass gathering,[1] and this is reflected in the recommendations for first aid support of one first aider per 1000 people.[2] Casualty rates vary considerably with the type of event, category 1 events (short all seater events such as football matches or a concerts) having a lower rate than category 2 (spectators mobile within a defined area often over a long period, as in a fairground or golf tournament).[3] At the Los Angeles Olympic Games in 1984, a predominantly all seater event, the casualty rate was 1.6 per 1000 spectators.[4] With mobile crowds rates are much higher: 9 per 1000 at a rave,[5] 10 per 1000/day at a scout camp,[6] 17 per 1000 at a rock festival,[7] and 28 per 1000 participants in a marathon.[8]

Alcohol probably increases the casualty rate. At two open air music events in the United Kingdom a primary diagnosis of alcohol intoxication was made in about 4% of cases.[7 9] The casualty rate was reduced from 2 per 1000 to 1 per 1000 during the *Euro '96* football competition when alcohol was banned at Wembley stadium.[10]

An analysis of 1064 casualties at a rock festival showed that half had surgical problems.[7] These typically result from crushing against crowd barriers, falls, and assaults—although missiles (urine filled plastic beer bottles and complimentary wooden "records") were a common cause of head injury (5.7% of all attenders).[7] In one study severe trauma occurred in 1.4% of attenders.[9] The most frequent medical complaint is headache (22.7%[7]-31.6%[5]), which may affect both staff and crowd members. Other common complaints are syncope, hyperventilation, asthma, epilepsy, and hypoglycaemia. Specific problems may be anticipated at certain events, such as substance abuse at a rave.[5] In a large crowd there will always be someone with a chronic condition: the lack of common sense and preparation that such a person shows when determined to attend an event should not be underestimated. Cardiac arrest is uncommon (0.01-0.04 events per 10 000 people) but is the most critical situation for which medical support must be prepared.[11] The importance of providing defibrillators at sports stadiums has been recognised for over 25 years.[12]

The millennium celebrations will be spread over at least four days. Experience from the Hogmanay celebrations in Edinburgh over three days from 31 December 1997 was of a massive additional number of casualties presenting to the accident and emergency department of Edinburgh Royal Infirmary. The scale was analogous to that of a major incident and was difficult to manage even with a temporary 50% increase in staffing.[13] Planning is essential to provide medical support at a mass gathering. Low hospital referral rates from events in the UK (0.45%[9]-3%[14]) confirm the importance of on-site medical cover in minimising the workload for local health services. Yet there is little guidance on medical facilities required.

If the recommendations for football matches are extrapolated to mass gatherings in general, for all crowds over 2000 there should be a doctor "trained and experienced in prehospital care," one defibrillator for all crowds over 5000, at least one paramedic ambulance for crowds over 5000, and one first aider per 1000 (one per 2000 for additional crowd over 20 000).[2] Nevertheless, it may be difficult to gauge numbers for one-off events such as the millenium celebrations. At the 50th anniversary of the Golden Gate Bridge in San Francisco 100 000 people were expected. The actual number was 800 000.[15]

Planning must include an appreciation of the skills and equipment that can realistically be provided at the venue. In one study 14.5% of wounds required suturing or the application of steristrips or staples[9]—skills beyond a first aider or paramedic; a doctor or nurse present could avoid the need for hospital attendance. In the same study 25% of the wounds were cuts from glass, yet few venues can offer *x* ray facilities.

The potential for a major incident always exists, and such an incident must be anticipated. Planning and exercises will ensure that the infrastructure to control the incident is in place, that staff have predetermined roles, and that stores of major incident equipment are held in strategic areas within the venue.

The millennium celebrations will take place at the worst possible time. The workload over any new year is the highest of the year for ambulance services; an influenza epidemic or normal winter pressures may limit hospitals' capacity for additional admissions; medical cover for individual venues, often provided by volunteers, may be difficult to find because the volunteers want to celebrate or are needed at their normal place of work; and the millennium bug threatens to disrupt utilities, transport, and communication systems. Yet many organised mass gatherings are already planned, and medical problems can be expected at all of them. Organisers must plan their medical resources now.

"Mass gatherings and major incidents" is the theme of a one day conference run by *Pre-hospital Immediate Care* on 15 April 1999.For further information contact: Jane Lewis, BMA Conference Unit, tel: 44 171 383 6605, fax: 44 171 383 6663. email: confunit@bma.org.uk

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Will the NHS pay awards help recruitment?

Not on their own

Much has been made of the plight of NHS employees, ranging from observations on falling pay relative to other sectors, low morale, and severe recruitment and retention problems. The restructuring of the methods of pay setting, an ageing population, and a deteriorating public image of the NHS have all contributed to the problems the NHS has faced as an employer in recent years. Will the above inflation pay awards to health professionals, implemented this month, have eased these problems?

The pay review bodies have been central to the problem, as the last government in effect used them to facilitate the decentralisation of pay determination to local level. Some industrial relations experts have argued that this, together with the lack of extra government funding, has been key to the pay inequities and industrial relations problems in the NHS.[1]

The Labour government has recently accepted in full the recommendations of the pay review bodies, which do make a start at attempting to address these pay and employment problems. These pay awards, the first in five years to not be staged, give NHS employees their largest pay rises for 10 years: nurses, midwives, and health visitors have been awarded a 5% increase in pay; hospital doctors and general practitioners have been awarded lower increases, but still above inflation. Importantly, newly qualified nurses have seen their starting salaries raised by 12%, up to an annual salary of £14 400. Indeed, no other public sector group has done as well.

Is this enough to offset the staffing problems the NHS faces? The pay awards probably form a good starting point, but by themselves they are not enough. The awards should address some of the pay inequities embedded within NHS pay structures, but there is some way to go to reverse the longer term pay declines (relative to other sectors) that underpin the NHS's staff problems. Recruitment difficulties may well be tempered by the increase in starting salaries for nurses as this brings them almost in line with entry salaries into teaching.

But the other side of the recruitment-retention coin—that of keeping workers in the NHS—is unlikely to be significantly affected. For example, a survey in December 1998 by Incomes Data Services showed that over 90% of NHS trusts reported difficulties in recruiting and retaining staff in the year preceding the survey.[2] This year's pay awards are unlikely to be sufficient to circumvent and cure problems on such a scale as this. The awards do have their merits—and something clearly had to be done—but a longer term commitment to resolving the pay and employment problems for all types of NHS employees would inevitably have had a bigger impact.

Another, and contrary, concern is whether such big pay awards to public sector workers are likely to have inflationary consequences. Predictable responses came from some commentators, such as tabloid journalists and some NHS trust managers, stating that these awards could signal the beginning of an inflationary spiral triggered off by such public sector pay awards. Yet productivity (measured by a range of indicators such as five star performance in league tables, falling average waiting times, and improved patient care) seems to have risen in the NHS in recent years. And standard economics tells us that productivity improvements are commensurate with increased pay awards.

The government's decision to raise the pay of nurses—particularly at entry level—is sensible in the context of the severe staffing problems faced by the NHS. But much damage has been done by the cumulative relative decline in pay and loss of staff of the past 10-15 years. Over and above this, the public's perception of nursing jobs and the NHS as a whole has altered dramatically. It is likely to take much more than a single pay rise to change this and make nursing an attractive job again. Given that the ageing of the population in Britain makes the demand for high quality workers in the nursing professions more acute, it is time for some more thoughtful workforce planning.

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