



editorial

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Death in restraint: lessons

The Independent Panel of Inquiry into the death of David Bennett, a patient who died while being restrained at a secure unit in Norwich in 1998, has recently published its findings (Norfolk, Suffolk and Cambridgeshire Strategic Health Authority, 2004). The report contains 22 main recommendations, the majority of which concern matters of race, ethnicity and the importance of training for all National Health Service (NHS) staff with respect to cultural diversity. Three of the recommendations, however, pertain to the procedures involved in the manual restraint of mental healthcare patients who are behaving in a violent manner. Another recommendation concerns the need for mental health professionals to undertake basic training in cardiopulmonary resuscitation. These four recommendations are the concern of this article. The impact of the recommendations for the policies of the NHS trust in question is reported. All mental health services in the UK – especially those responsible for providing care under secure conditions – need to take on board some of the important lessons that have been learnt.

Circumstances of David Bennett's death

David Bennett was 38 years old at the time he died. He had a long history of chronic schizophrenia and had received care in a number of mental health settings since the early 1980s. Since the autumn of 1995 he had been detained under the civil powers of the Mental Health Act 1983 at the Norvic Clinic in Norwich, a forensic unit providing medium secure services to the counties of Norfolk, Suffolk and Cambridgeshire. David Bennett's schizophrenic illness was of the refractory type and at the time of his death he was being treated with atypical antipsychotic medication.

On the evening of Friday 30 October 1998, following an altercation with another detained patient in which blows were exchanged, David Bennett was transferred from one ward to another within the Norvic Clinic. There he assaulted a female nurse, prompting an immediate response from the rest of the nursing team who applied restraint procedures in an attempt to prevent any further harm. The restraint did not proceed smoothly and David

Bennett was held on the floor in the prone position for at least 25 min. Towards the end of the restraining period the nursing staff became aware that he had collapsed and was unconscious. Subsequent attempts at resuscitation proved to be unsuccessful. David Bennett was taken to a nearby accident and emergency department where he was pronounced dead shortly after midnight on 31 October 1998.

At the subsequent coroner's inquest, evidence was heard from two forensic pathologists, who had conducted separate post-mortem examinations, and from a forensic toxicologist. The pathologists reached a consensus with respect to the cause of death, which was reported as myocardial dysrhythmia secondary to prolonged restraint in the prone position and to the long-term administration of antipsychotic medication. The serum levels of neuroleptics were consistent with therapeutic doses. Very high levels of the enzyme creatinine kinase were present, which (in the opinion of the toxicologist) was an indication of muscle damage occurring in the agonal period. This was probably the result of extreme exertion and the pressure applied by the restraining nurses.

Death in the course of manual restraint

Case reports of deaths occurring during manual or mechanical restraint started to appear in the early 1990s (Reay *et al*, 1992; O'Halloran & Lewman, 1993). The majority of these deaths were within law enforcement settings in North America. Such an instance had, however, been previously reported in a mental health unit in the UK (Morrison & Sadler, 2001). A number of themes emerge from these case reports. The detainees had an abnormal mental state associated with marked behavioural disturbance (often referred to as 'excited delirium' in forensic medicine circles); often quantities of stimulant drugs such as cocaine had been ingested, and death followed a period of restraint in the prone position.

The mechanism of death in restraint fatalities has been the subject of some debate. The most frequently advanced explanation concerns impaired respiratory processes arising as a direct consequence of being forcibly held down in the prone position. This is referred



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to as 'positional asphyxia'. It is argued that the prone position impedes expansion of the thoracic cage and downward movement of the diaphragm. The subsequent hypoventilation then leads to a state of increasing hypoxia, aggravated by the body's significant oxygen requirements because of vigorous metabolism consequent to marked exertion. The response of the restrained person is to struggle further in an attempt to escape, but this simply results in the continuation of the restraining procedure. The combination of hypoxia, high circulating levels of catecholamines and lactic acidosis contributes to the development of a fatal ventricular dysrhythmia. In the case of a psychiatric patient, where nursing staff exerting pressure on the limbs provide the restraining force, the force acting on the limbs is transmitted to the thorax rather like the pressures exerted by a guy-rope.

It has to be said that there is only a limited amount of experimental evidence to support this asphyxial hypothesis. Early studies did demonstrate some impairment in respiratory haemodynamics (Reay *et al*, 1988) but later studies failed to replicate these results (Chan *et al*, 1997). The pathologists who gave evidence at the coroner's inquest into the death of David Bennett suggested a possible alternative mechanism of death. Muscle damage consequent to the pressure applied to the limbs might have led to the leakage of significant amounts of potassium ions from the muscle fibres. The restraining nurses would in effect have acted as tourniquets. Potassium ion concentrations would have built up locally. When the limb pressure was eventually released, there would have been a surge of potassium ions into the central circulation, possibly leading to the fatal ventricular dysrhythmia.

Lessons and implications for mental health services

The containment and management of violence is clearly a difficult task for mental health professionals. All health-based interventions carry some risk. Mental health professionals run a risk not only when intervening in a violent incident, but also when not intervening. Norfolk Mental Health Care NHS Trust, like all other mental health services in the UK, developed local protocols and procedures for the prevention and management of violence in the absence of any national guidelines. The recently published National Institute for Clinical Excellence guidelines refer to the need for staff training in intermediate life support, availability of emergency resuscitation equipment, and the avoidance under all circumstances of applying pressure on the neck or thorax during manual restraint (National Institute for Clinical Excellence, 2005).

Since May 2001 specific considerations with respect to restraint in the prone position have been explicitly incorporated into the policies of the Norfolk Mental Health Care NHS Trust. The risk of positional asphyxia is highlighted and nursing staff are now urged to avoid all restraint in the prone position if possible. If this is not possible, the restraining position must be changed from the prone as soon as practicable. All prone restraint is

timed and must be recorded in the case record. The policies have not yet been amended to take account of the Independent Panel of Inquiry's specific recommendation that the time limit for prone restraint be set at 3 min. The trust is interested to hear whether any other mental health provider has incorporated any such time limit within its policy. In addition, since May 2001 the trust has linked training in life support and resuscitation skills with the training in the prevention and management of aggression, so that both sets of training are provided within the same course. All clinical staff are trained to a level of basic life support and all professionally qualified staff receive training to an advanced level, which includes the operation of automated defibrillators.

The Panel of Inquiry also drew attention to the absence of a resident doctor on call at the Norvic Clinic. Although not given as one of the 22 main recommendations, within the body of the report the panel states that in all units where a mental health patient is detained arrangements should be in place to ensure the immediate presence of a doctor, or at least attendance by a doctor within 20 min when required. The Norvic Clinic is one of three in-patient mental health sites in Norwich, two of which are on opposite sides of the city. The first-line emergency cover is provided by rotas of senior house officers who are also required to attend an accident and emergency department on a separate site for mental health assessments. The number of junior doctors on duty during evenings and weekends within Norwich was reduced by a third on 1 August 2004 when the European Working Time Directive came into force. It is simply not logistically possible to meet this recommendation in Norwich. The situation in Norwich is not dissimilar to that in other parts of the UK. This particular recommendation is not compatible with the strategic policy applied to mental health over the past two decades. It can only be met by a reversal in direction and a return to centralised services oriented to in-patient care. Patchy emergency medical cover fits hand in glove with the policy of dispersing mental health services. The author does not advocate a reversal in policy. However, the risk posed to some elements of patient care should be explicitly owned by the Department of Health and primary care trust commissioners, not shouldered by provider units.

Declaration of interest

The author has occupied the position of Medical Director of Norfolk Mental Health Care National Health Service Trust since July 2000.

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