Making hospitals safe for patients

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> "It may seem a strange principle to enunciate, as the very first requirement of a hospital, that it should do the sick no harm" (Nightingale, 1859).

The principle is less strange today than when it was first proposed, but making hospitals safe for patients is no easier. Stepping aside from one danger, one may fall into the path of another. Legionella risks can be avoided by higher water temperatures but this in turn introduces a risk of scalding. Security measures can protect the individual and work space but may compromise fire safety. This paper describes a similar problem of conflicting safety measures and its unfortunate consequences.

Our new psychiatric unit was commissioned in 1992 on a greenfield site within the grounds of the general hospital. During the design stage, reference was made to the appropriate Government documents (Hospital Technical Memorandum HTM 81, 1987; Hospital Building Note No. 35, 1988; available upon request from the authors), and to the local authority and the local fire authority for building regulations approval. The unit was designed to afford a more 'domestic' environment than the old hospital it replaced. Particular emphasis was placed on landscaping of outdoor areas and on internal decor and furnishings, and all patients were accommodated in single bedrooms. Official building guidance concerning doors to individual bedrooms states as follows:

> They can serve to limit the spread of smoke and toxic gases from the room of origin . . . . However, medical and nursing opinion is that the provision of doors can impair patient observation, delay detection of a fire in its early stages and possibly hinder evacuation from a ward or bedroom. This issue is finely balanced and does not lend itself to definitive guidance. Local factors will influence a final decision and for this reason it is recommended that the decision should be taken by the project team in association with the local fire authority. (Hospital Technical Memorandum HTM 81, 1987; available upon request from the authors)

The doors that were eventually fitted to bedrooms, each had a 30 minute fire delay rating (as called for in the guidance), and each had a discreet one-way observation facility. As these were fire-rated doors, the fire authority advised that automatic door closures should be fitted. The devices fitted comprise a spring mechanism attached to the top of the door; this is connected to the door frame by upper and lower short projecting arms, which are jointed at the end to form a moving 'V'-shape. Each room also contained an automatic smoke detector linked to the main fire panel.

Two problems emerged in response to this type of door. Many patients found the observation facilities intrusive, and rendered them ineffective by hanging clothes and other items inside their doors. As a result, staff had to open doors frequently if patients were subject to regular observation; the automatic door closure then disturbed the patients' sleep. The night nursing staff therefore adopted the practice of laying a towel between the door and its jamb, but thus negated its effect as a fire door. The second problem was the potential use of the door closure mechanism as a means of suicide.

Although not considered at risk of suicide, a patient hanged himself by use of the top projecting arm of the automatic door closure in a first floor bedroom. Under the weight of the body the arm bent down over the door closure mechanism, and effectively jammed the door closed. Access into the room from outside the building using a window was impossible, as the first floor window was fitted with a restricted opening mechanism to prevent suicide attempts by leaping from a height. After some forty-five minutes the door was forced open, but by then any hope of resuscitation had long since passed.

A hospital review was established in line with our normal protocol. The panel heard evidence that the self-closure of doors was required for fire safety. Alternatives to the current mechanism employed were one internal to the door, or a closure in which the arms folded flat against the door when it was in a closed position. Replacement with internal fittings would have been very expensive. The other type of fitting still provided facility for suspension of a rope or cord, even though the closure arm would no longer project from the door. No description of similar events in other hospitals was found in Department of Health *Hazard Notices* or *Safety Information Bulletins*. The panel therefore took the view that they had to balance benefits and risks, and recommended that the door-closing devices be retained. They also recommended abolition of the practice of keeping doors open with towels.

Unfortunately, 12 months later, another patient hanged himself in the same way, although again he was not considered at risk of suicide. The review panel was reconstituted, and now recommended replacement of all the implicated door closures. A number of options were explored to minimise the cost and disruption of changing all the door closures. The most expedient option was to drill a hole through the bottom arm of each door closure, thus weakening the arm when subjected to a vertically applied load and causing it to collapse immediately. This would force the top arm to bend downwards, and hopefully tear the top arm fixing screws out of the door frame. As this was unproven, it could not confidently be adopted without much further research.

Discussions also took place with the Estates Directorate's Officer responsible for fire advice and building regulation standards, who pointed out a change in Government guidance. The new advice stated that "with the exception of fire doors to patients' bedrooms and doors which are kept locked shut, fire doors should be fitted with an automatic self-closing device" (Hospital Technical Memorandum No. 81, 1996; available upon request from the author). As a result of this revised advice and with the agreement of the fire authority, the door closures were removed; thus saving the Mental Health Directorate many thousands of pounds and staff and patients much inconvenience. In consequence, a suicide risk was removed and patients could once again be observed without their sleep being disturbed by self-closing doors.

The purpose of this article is to point out the sometimes conflicting demands of different types of danger and risk, and to highlight the changes in official guidance which may warrant a repeated audit of safety measures built into health care buildings. New building guidance includes the following advice (Hospital Building Note No. 35, 1996; available upon request from the author):

> "Care should be taken that fixtures or fittings such as curtain rails or coat hooks, which could be used for attempts at suspension, are low weight bearing. This also needs to be balanced against any risks arising from the breakage or collapse of the fittings, either accidentally or through deliberate action.'

Such then is the tightrope to be trodden when planning and equipping a health facility for the mentally ill: managers and clinical staff must take care that one risk does not arise when another disappears.

Reference

NIGHTINGALE, F. (1859) *Notes on Hospitals*. London: John W. Parker and Sons.

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